The Harveian Lectures
ON
PAINFUL MENSTRUATION.

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LECTURE I.
INTRODUCTION.

MR. PRESIDENT AND GENTLEMEN,—When I received an intimation of the honour which your Council wished to confer on me, I felt many difficulties in accepting it. In the first place, I remembered the excellent Harveian Lectures delivered before the Society by many men of high distinction, into competition with whom I shrank from entering. In the next place, the difficulty of finding a subject which should prove of general interest oppressed me. After serious thought I determined, as regards the first, that the Council of the Harveian Society must be better judges than I, and that it would be wise to hide my deficiencies behind their choice. As regards the second, remembering that the large majority of the members are engaged in general practice, I decided to leave all such subjects as are, in the first instance at least, of purely scientific interest, and to choose a subject of general and practical importance. Among such, the subject of Painful Menstruation seemed to me one of the most suitable; for, although the name is only the name of a symptom, still, it embraces a vast number of cases which come before our daily notice. Added to this, the subject is one of great difficulty. The truth of the views which have, at least till quite lately, held the field, and which have entailed a great amount of local treatment of a particular kind, have been seriously undermined by investigations which ought in truth to have preceded, instead of following, theories and practice based on these views. To collect the truth, so far as it has been ascertained, into an easily accessible form, seemed to me to be particularly desirable; and it is with this object that I have worked. It will be my reward if such a presentation of facts, both pathological and clinical, based, not on the opinions of eminent men, but on the "Harveian" investigation of the truth, shall bear fruit in better knowledge, and consequently better practice.

MENSTRUATION.

To enter on a complete description of the known, and on a complete discussion of the still uncertain, phenomena of menstruation would occupy more time than that available for these lectures. I therefore propose to confine myself to a brief statement of what is known, and a brief statement of what is debatable, keeping in mind that our present object is the elucidation of painful and not of normal menstruation. It is generally known that in this country the average age of the first menstruation is about fourteen; that of its cessation about forty-five. The average rhythm is about twenty-eight days, counting from the beginning of one period to the beginning of the next. Much confusion is often imported into this question by patients. For instance, one is often told that (in cases where it is pathologically frequent and profuse) it occurs every week and lasts a fortnight, a statement which is inconceivable until we realise that what the patient really means is that it recurs every three weeks, lasting a fortnight, with a week's clear interval. It would save much trouble if some nomenclature, intelligible to patient and doctor, could be invented. Its duration varies greatly, perhaps five days is about the average. The quantity lost varies greatly, perhaps four to six ounces may be taken as the average. The colour is that of prune juice, it is acid, and does not normally coagulate. The cause of this peculiarity has been variously explained. The popular explanation appears to be that it is due to admixture with acid vaginal mucus. Another explanation is opposed to this hypothesis, and attributes the absence of coagulation to the admixture of the blood with the secretions of the uterus, cervix, and vagina.

In Whitehead's work on Abortion and Sterility (1847) there is an interesting chapter on the "Nature of the True Menstrual Secretion" (p. 21). He collected some twelve specimens of menstrual fluid through a speculum, first wiping away the mucus which exuded from the cervix. As it escaped it was not so dark as menstrual blood usually is, and coagulated in three or four minutes. Sometimes it escaped from the cervix as a thin stream of pure blood; sometimes as thin coloured serum, with small flattened clots of the size of small orange seeds, which afterwards broke down in the vaginal mucus, and escaped at the "ostium externum" (of the vagina) in the usual uncoagulable form. It was always alkaline. He found that one part of pure acetic acid in sixty parts of blood from a vein or from a scarified surface prevented coagulation. "Vaginal mucus" added to blood prevented coagulation. It is quite plain that by "vaginal mucus" is meant the cervical mucus found in the vagina; for its description (p. 20) leaves no doubt on this point. An interesting fact in this description is the observation of the escape of clots as large as orange-pips from the cervix. Another interesting observation is that of Vogel (Wagner's "Physiologie," 3 Auflage, S. 230, Anm., quoted by Krieger), in which the menstrual blood collected from the uterus in a case of procidentia did not coagulate. Here the vagina was eliminate, but the cervical mucus was not. It is, however, a matter of common observation that menstrual blood, as seen through the speculum issuing from the cervix, is of the dark menstrual colour not seen at other times, and liquid. This difference, since it does not depend upon the blood itself, must depend upon the alteration in the secretions of the uterus and cervix, doubtless in respect of quantity (and possibly also of quality), such as is observed during labour, which must always be kept before our eyes if we are rightly to understand menstruation. We conclude that the cause of the non-coagulability of the menstrual blood is its admixture with uterine and cervical mucus, and that its coagulation in cases of profuse menstruation is due to the excess of blood over mucus. The cause of the acid reaction of the vagina is still unknown. Microscopically, menstrual blood consists of blood-corpuscles of both kinds, mucous corpuscles, compound granular corpuscles, uterine, cervical, and vaginal epithelium.

Changes in the uterus: mucous membrane.—In speaking of the "mucous membrane" we use this word, in its popular sense, for the layer superficial to the muscular fibres. This is, however, probably incorrect morphologically; for, as Dr. John Williams has pointed out,[1] the human fœtal uterus shows a distinct submucous layer just beneath the peritoneum, and this makes the whole of the tissue internal to this mucous membrane. Nearly the whole of the muscular thickness of the human uterus is therefore "muscularis mucosæ," and the apparent absence of a submucous coat, which is so strange, is explained. We all know that size counts for nothing in questions of homology, and, remembering this, the above startling theory loses its improbability. It is, moreover, in accordance with comparative anatomy, for the uterus of most of the lower animals is more like intestine than like the human uterus, and the relation of the submucous layer in their uterus to its two surfaces is like that of the submucous layer of the intestine. This view has also been arrived at by so excellent a microscopist as Dr. Delépine of St. George's Hospital, who was unaware of Dr. Williams's observations, and we believe that it will eventually prevail. The layer, however, known as "mucous membrane"—that is, the part superficial to the muscular coat—has a thickness of 1 mm. ($\frac{1}{25}$ in.) before the first menstruation. At its full growth before the first menstrual flow it measures from 3 to 6 or 7 mm. (from $\frac{1}{8}$ to $\frac{1}{4}$ in.), a thickness which it regains before each flow; but after the first menstruation it never regains its original small thickness, but maintains a minimum thickness of 2 mm. ($\frac{1}{12}$ in.).

With regard to the changes associated with menstruation opinions and observations differ. Kundrat and Engelmann (1875) examined uteri in the pathological laboratory of the Allgemeines Krankenhaus in Vienna. These consisted of "seventeen pregnant uteri and two hundred others, some of which corresponded to the menstrual period, some were the subjects of recent abortion, some of recent parturition." Those concerned with menstruation are not enumerated, and general conclusions only are stated. The conclusions are as follows:—The increase in thickness is due to proliferation of the round cells of the stroma, an enlargement of all the cell elements of the superficial layers, and an increase in the intercellular substance. The glands are

[1] Obstet. Trans. for 1885, vol. xxvii., p. 112.

increased in thickness and length, and the vessels are engorged. The increase in thickness of the mucous membrane begins at the approach of the menstrual period, is most marked during the flow, and afterwards gradually decreases. Fatty degeneration takes place in the cells of the inter-glandular tissue, bloodvessels, and glandular and surface epithelium. The cause of the hæmorrhage is fatty degeneration rendering the tissues unable to resist the pressure of the blood. Only the superficial layer of mucous membrane is shed. Dr. John Williams (1875) presented the first, and so far the only series of observations of uteri at different periods during the month. He believes that the whole of the mucous membrane—that is, as far as the muscular fibres—is shed in menstruation, that this shedding takes place from below upwards—that is, from the os internum upwards,—and that its regeneration takes place from below upwards also. Its increase in thickness is a growth. The predisposing cause of the bleeding is fatty degeneration; the exciting cause uterine contraction. The hæmorrhage takes place near the surface, where the degeneration is furthest advanced, after which the whole membrane rapidly breaks down and is removed. Leopold (1877) studied the mucous membrane of the uterus during menstruation, pregnancy, and the lying-in period. His own observations of menstruating uteri are six, and he quotes from Dalton (Essay on Corpus Luteum, 1851), Hyrtl (in Bischoff's article, "Menstruation und Befruchtung," 1844), Benham (Corpus Luteum, 1873), Janzer (1848), and Dittrich (1851). Some of these observations, all of which were made previously to the beginning of active inquiry in 1875, concern the other subjects of Leopold's paper rather than menstruation; while, in numbers, those subsequently to the date mentioned are about half of Dr. Williams' series. Still, this question will not be decided by numbers until observations are far more numerous.

Leopold denies fatty degeneration. He describes the increase of thickness in the mucous membrane as "swelling," "œdema," without explicitly denying true growth. He believes that the bleeding is caused thus: A few days before menstruation, the swollen mucous membrane is quite intact, and shows no fatty degeneration or engorged vessels. Ovarian influence causes acute hyperæmia of the vessels of the mucous membrane, the superficial capillaries are filled to repletion, and from them corpuscles escape (diapedesis) for several days into the surrounding tissues, especially towards the surface, undermining the epithelium and superficial layer of cells, and the orifices of the glands. He has never seen regeneration take place from below upwards. Wyder (1878) believes that the cause of menstrual bleeding is not primary fatty degeneration (Kundrat, Williams), but very likely the peculiar vascular arrangement (Leopold). The most superficial parts of the mucous membrane only are detached. His cases are two in number. De Sinéty (1881) found the epithelium in menstruating uteri intact, and could not find it in carefully decanted menstrual fluid. Möricke (1882) scraped the uteri of forty-five women shortly before, during, and after menstruation. He states that during menstruation the mucous membrane remains intact and preserves its ciliated epithelium. There is no increase in the inter-glandular cells or any fatty degeneration. The vessels are engorged, extravasations take place beneath the superficial layers, and the homogeneous ground-substance is always increased. The cause of the bleeding is reflex engorgement due to ovarian activity, and acts through the peculiar vascular arrangement (Leopold and Wyder), but by diapedesis and not by extravasation. Wyder (1883) discusses a series of uteri at various stages, only two of which are his own, and are apparently those already mentioned. In one of these the cylindrical epithelium of the mucous surface was wanting and the mucous membrane was uneven. A clot in the uterus consisted of unaltered cylindrical epithelium. The patient died on the fourth day of menstruation from an accident. There was no fatty degeneration. Extravasations the size of a pin's head were found in the mucous membrane. The other case was that of a woman aged thirty-one who died from burning on the eighth day after the beginning of menstruation, the burning taking place fourteen days before death or six days before menstruation. The cylindrical epithelium of the mucous surface was retained in places; extravasations in the superficial layers; no fatty degeneration. His other cases are taken from Leopold. The cause of the bleeding, according to him, is not fatty degeneration, but diapedesis, as well as extravasation from torn vessels, but especially diapedesis. Extravasation leads to partial detachment of the surface, while (as proved by Spiegelberg in a menstruating inverted uterus[2]) bleeding may take place from an intact surface. Besides this, the pressure of the extravasated blood impedes nutrition, and produces fatty degeneration of the involved portions. Minot (1889) found in a virgin, who was said to have died on the day of the regular period, the mucous membrane 1·1–1·3 mm. ($\frac{1}{25}$–$\frac{1}{21}$ in.) thick, its upper fourth very much broken down, some of the vessels doubtfully torn through, the surface epithelium everywhere loosened, and in parts absent, much proliferation of small cells in the deeper layers, no large decidual cells or increase of leucocytes. (Minot's statement as to the day of menstruation is given uncertainly, and the thickness of the mucous membrane is very small.) The facts observed and the theories upheld by these different authors are equally contradictory.

Fatty degeneration of the mucous membrane, the nature of its increase in thickness, the cause of its decrease in thickness, the cause and nature of the bleeding—all these are still matters of dispute. We shall discuss the whole question a little later, but will here only say that the increase of thickness cannot be due to mere swelling, or the glands would become shorter and straighter instead of longer and more convoluted; and that the cause of the bleeding, occurring suddenly and punctually as it does, cannot be due to a merely gradual cause. Indeed, in considering the whole question, it seems to me that there is a danger of microscopical investigations inducing a near-sighted view, and that such investigations, valuable and indispensable as they are, need controlling and correcting by clinical observations which, unlike them, can be continuous and direct. For let us just consider what is meant when we assert that during any gradual process such and such changes are proved by the microscope. It means that from a series of individuals with all their peculiarities and individualities neglected, we construct a composite picture by inference, just as we might construct a picture of a horse at full gallop from a series of pictures of different horses at different parts of their stride. Such a picture, though it might be valuable, would certainly not be the same as the reality of any one galloping horse. A similar caution must be remembered with regard to inferences drawn from the results of curetting. How can anyone assert that he has scraped the whole uterus? This has been tried and tested by subsequent examination of the uterus, and it has been found that the apparently thorough scraping has been far from perfect. Then as to the injury caused by the curette; surely this must be discounted. The results of scraping, therefore, must be received with caution in these respects. In the literature of the subject much criticism will be found of the modes of microscopical examination, and questions of loss of epithelium, decomposition, &c., will be repeatedly met with to explain differing results.

In any future investigation—and it is to be hoped that such will be forthcoming in a large series—I would suggest that careful and tabulated notes should be furnished of complete menstrual history, of its rhythm, its last occurrence, of the cause of death, of the time intervening between death and the necropsy, of the temperature of the surrounding air, of the treatment of the specimen after the necropsy (noting the time intervening between the necropsy and its immersion in preparatory fluids), the mode of preparation, and, finally, the microscopical examination, which should include that of fluids and substances found in the genital tract. A good plan of avoiding the reproach of unskilful loss of epithelium &c. has been adopted by placing the surface of the mucous membrane in contact with a piece of known tissue, such as liver, and cutting the two in contact.

THE QUESTION OF UTERINE CONTRACTION.

We know that the uterus contracts periodically, generally without but sometimes with pain during pregnancy; we know that uterine fibroids sometimes undergo similar spontaneous and rhythmical contractions. The question is: Does the uterus contract in connexion with menstruation; and, if so, when, and with what result? This question it is not at present possible to answer certainly in the affirmative. But I firmly believe that that affirmative answer will be given hereafter; and in the meanwhile the behaviour of fibroid uteri during menstruation and the phenomena of menstruation itself seem to me to point strongly in that direction. Fibroid uteri have been seen to

[2] Lehrb. der Geburtsh., 1878, S. 45.

enlarge with fair steadiness during the inter-menstrual period, and to diminish (contract) before the flow, the diminution continuing during the flow. The dimensions have been tested by vertical, transverse, and internal measurements.[3] Another proof of uterine contraction in connexion with menstruation is furnished by the occasional regurgitation of menstrual blood through the Fallopian tubes, forming a so-called menstrual intra-peritoneal hæmatocele. This, again, is allied to a similar regurgitation which sometimes occurs after the opening of a so-called imperforate hymen with retention of menses, a regurgitation whose favourite time, it must be remarked, is after the relief of tension, and not before. Spontaneous contractions in the uteri of the lower animals, apart from excitement, are very doubtful; but, on the other hand, is yet to be proved that any animal "menstruates" during heat, and any conclusions drawn by analogy from animals to women in this respect are liable to error.

CONDITION OF THE PELVIC ORGANS DURING THE MENSTRUAL CYCLE.

The condition of the pelvic organs during the monthly cycle is learnt by observations on fibroids, on the condition of the cervix uteri and vagina as regards colouration and texture, and on hernial ovaries; and it is confirmed by observations on the general vascular conditions of the body, and of the pelvis especially. As regards fibroids, the observations already referred to showed in some cases a gradual increase, beginning after menstruation, and ending in diminution (contraction) shortly before the flow. As regards the cervix and vagina, these are seen to become darker and fuller of blood as the menstrual flow approaches, and the cervix at the same time often becomes softer; moreover, at this time erosions are liable to become livid and bleed. As regards hernial ovaries, a case was observed by Dr. Oldham in 1857, in which about every three weeks one or both ovaries increased in size, and then shrank. The woman had no uterus or vagina, so that the belief in the menstrual character of the swelling could not be proved. This question is seen to be bound up with the difficult problem of the relation between ovulation, impregnation, and menstruation, which some recent observers have attempted to dissociate. In some of the lower animals there is undoubtedly a long interval between ovulation and impregnation (for instance, in bats), and in this case the uterus may remain full of semen for months before the ovum is extruded from the ovary, showing that in them the semen lies in wait for the ovum rather than the ovum for the semen. There seems no reason why semen should not live in the uterus of the female as well as in the testicles and vesiculæ seminales of the male. In most mammals, and especially in women, the question is doubtful, but not, I venture to think, to the extent of dissociating ovulation from menstruation. Whatever may be the behaviour of the Graafian follicle, however, it seems, from the phenomena of the approach of menstruation, especially in cases of ovarian dysmenorrhœa (to be hereafter referred to), that the menstrual epoch is preceded by a period of sanguineous afflux, both to the ovaries and to the rest of the pelvic organs. As the flow approaches, the whole pelvis, including the ovarian regions, is often the seat of a feeling of tension, and this is accompanied by the darkening and softening of the cervix and the darkening of the vagina. As regards the general vascular condition of the body, and especially of the pelvis, the pulse has been found to increase in rapidity from a minimum one to four days after the flow, to a maximum seven or eight days or less before the next. It seems to me more than probable that, as regards the pelvis, the growth of the mucous membrane is accompanied by increasing afflux of blood to the pelvic organs until the time of the flow, and that this is determined by uterine contraction, which, acting suddenly, squeezes the blood out of the distended capillaries, and so into the uterine cavity. Some such explanation is required, for it is to me inconceivable, as above said, that a bleeding so sudden and so punctual can be due to a gradually acting cause. The difficulties surrounding the fact of its punctuality are akin to those besetting the question of the cause of the beginning of labour—a question which, in all matters connected with menstruation, has been too much lost sight of. Whatever may be the predisposing causes of labour or of menstruation, it seems to me that the exciting cause of labour must also be akin to the exciting cause of the menstrual bleeding, and that in both this exciting cause must act through uterine contraction. To sum up, then, I believe that the thickening of the mucous membrane is due to growth; the bleeding is due to increasing afflux of blood to the uterus in common with the pelvic organs, on the top of which comes uterine contraction which determines the hæmorrhage.

[3] Williams: THE LANCET, vol. i. 1880, pp. 764 and 873. Dr. Williams also, in the Obstet. Journ., expresses his belief that the uterus contracts, because the cavity after menstruation is smaller than it would be if the mucous membrane were gone, without uterine contractions. This, however, seems to me more akin to retraction, and might be expected to occur after the evacuation of any of the uterine contents.

MENSTRUATION LITERATURE.

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GENERAL CONSIDERATIONS CONCERNING DYSMENORRHŒA.

A woman who suffers pain in connexion with menstruation may be said to be the subject of dysmenorrhœa. Yet a little consideration shows that we shall be obliged to narrow this definition. In the first place, it is plain that a woman whose menstrual pain consists in headache does not fall within the accepted limits, though it may be true that her headache is caused, or at least induced, by menstruation. There are many women liable, for general or special reasons, to headache, in whom the disturbance of menstruation is sufficient to determine it, more especially if menstruation is in any way disordered. But pain in the head cannot constitute dysmenorrhœa. The pain which is implied by that name must clearly, to be correct, be such as is or may be due to the pelvic organs, and must be contained within what may be conveniently called the "genital sphere." A crucial test of the proper boundaries of this sphere may be obtained by studying the regions affected by a well-marked disease, such as cancer affecting the pelvic organs. Such an inquiry as that undertaken by the author,[4] on the "Pain in Pelvic Cancer," shows that pain due to the pelvic organs is limited above by a line level with the iliac crests in front and behind, and by the level of the knees below. This excludes the common left submammary pain so commonly found in pelvic affections in women, but not confined to such affections in women or even to the female sex. Such pain, like headache, must be regarded as secondary or remote. Another consideration must be remembered. Women vary much in their capacity for feeling, appreciating, and bearing pain. There can be no doubt that at one end of the scale we have the hardy or callous individual who really does not feel that as pain which would amount in average women to severe suffering; and at the other, we have the hysterical or hypochondriac woman, to whom any sensation, however natural, amounts to agony. Again, as regards the appreciation of pain, we have the woman who thinks little and talks less of real pain, and we have the woman who regards any discomfort as injustice which she resents. The latter class are probably of increasing numbers in at least a part of a society whose greatest good is pleasure and whose greatest evil is physical discomfort. They form the army of morphiomaniacs, chloralomaniacs, cocainomaniacs, antipyrinomaniacs, and will be maniacs possessed by each reputed anodyne as it is advertised. The defect here is in the false position of their norma or zero. Perhaps this is better fixed for what we are pleased to call the lower animals. Lastly, as regards the capacity for bearing pain, which is really quite distinct from the other two, given the same power of feeling and appreciating pain, the power of bearing it and of controlling its reflex manifestations, varies greatly. We have no power of measuring pain as we have of measuring heat and

[4] Obst. Trans., vol. xxii., 1880, p 5.

electricity, and it is only by experience and judgment that a correct valuation can be arrived at by an observer, who naturally has the difficult task of discounting all disturbing influences.

CLASSIFICATION OF DYSMENORRHŒA.

Much misplaced ingenuity has been displayed in subdividing dysmenorrhœa into as many divisions and classes as possible. Some of these—as they do not seem to me, in medico-legal language, to have the power of maintaining a separate existence—I shall strangle in the birth, and shall not eventually register them.

Chlorosis and anæmia.—It is certain that anæmic, and especially chlorotic, girls are particularly liable to dysmenorrhœa, yet we shall not erect them into a class under the head of "chlorotic or anæmic dysmenorrhœa." Many of these are cases of imperfect development, chiefly of the nervous and vascular systems, and sometimes of the pelvic organs. It is easily conceivable that imperfect vascular nutrition of the pelvic organs, and especially the uterus, may hamper the function of menstruation, especially by inducing unconsentaneous, irregular, non-rhythmical contractions in the uterus—that is, colic. Such cases will fall under the head of spasmodic dysmenorrhœa. Others may be associated with a vague general aching in the pelvis connected with imperfect menstrual discharge. In many the constipation, which is rarely absent, must be remembered, for this is in itself sufficient in some cases to determine dysmenorrhœa, probably from congestion of the pelvic organs.

Gout and rheumatism.—This has been erected into a class, chiefly by the writings of Todd (1843) and Rigby (1844). The perusal of the cases, in some of which there is no record of a pelvic examination, fails to call up any clear picture to the mind. A woman who catches a chill before the monthly period may get rheumatism, and her dysmenorrhœa thus induced may be called rheumatic, but the same chill may have given her perimetritis. Gout, again, may be associated with dysmenorrhœa in one of two ways, either by a low form of inflammation of the serous membranes, or by its nervous influence. In both gout and rheumatism, dysmenorrhœa, if present, is probably inflammatory. It must be remembered, too, as regards the argument from the effects of treatment, that guaiacum does something besides act as a "specific" for gout—for instance, it opens the bowels.

Fibroids.—It is easy to understand that a fibroid, which, even apart from menstruation, is often a cause of severe pain, acting, as it does, as a foreign body, and exciting painful contractions (colic), should, during the sanguineous afflux of the monthly period—or, rather, before it—be the cause of frequently severe suffering. It is in fibroids that this swelling during the inter-menstrual period, followed by contraction just before the flow, can be best observed.

Ovarian dysmenorrhœa.—It is very doubtful how far, apart from inflammation, there is justification for this title. In cases that were formerly described as oöphoritis, but are now known to be usually associated with diseases of the tubes, a certain group of symptoms was often observed, and it is still correct to say that, in cases of inflammation of the uterine appendages, menstruation is affected in a particular or special way. Still, the inflammation is the primary fact, and its locality is secondary. The question of ovarian pain, produced by the maturation of deep seated Graafian follicles, rests on insufficient foundation. The ovaries, like any other organ, may be the seat of neuralgia, especially in neuralgic or weakly persons. Apart from these two considerations, ovarian dysmenorrhœa probably deserves to be struck out of the list. It therefore belongs in the main to the condition of inflammation, and should be classified with other forms of inflammatory dysmenorrhœa.

Diseases of the tubes.—What has just been said will relieve me of the necessity of specially describing dysmenorrhœa due to tubal disease.

Congestive dysmenorrhœa.—To separate this from the dysmenorrhœa due to inflammation seems to me neither possible nor desirable. Permanent congestion often follows inflammation.

Congestive and inflammatory dysmenorrhœa.—This name is, strictly speaking, a misnomer, for the pain, in the majority of cases, principally occupies the inter-menstrual period, and is relieved by the flow. Indeed, it often happens that the actual time of the flow, where this is at least moderate, is the most comfortable time experienced by the patient. The pathology of the affection depends rarely on the presence of acute inflammation, frequently on the sequelæ of past inflammation. In a case of perimetritis, for instance, while the affection is acute, there may be suppression of menses, or there may be profuse or scanty menstruation. The approach of the period is marked by increased afflux of blood to the inflamed and tender pelvic organs, with the result that they become the seat of pain. In a similar case, some weeks later, the temperature is normal, the acute inflammation has ceased, adhesions and peritoneal thickening have taken place. The swelling of the pelvic organs is impeded thereby, and the return of venous blood is obstructed by the adhesions. The symptoms are aching and a feeling of swelling in the pelvis, often quite general, including the rectum and bladder, and referred externally to the lower abdomen and base of the sacrum. In cases where the ovary and uterine appendages are specially affected there is pain in the groin of the corresponding side, darting through to the same sacro-iliac region. The patient, being asked to place her hand upon the seat of pain, often grasps this region, with the thumb on one spot and the fingers on the other. The pain runs down the inner or front aspect of the thigh. There is pain on defecation, especially if the left side is affected, from direct irritation of the inflamed and displaced appendages by passing fæcal masses. There is often pain on micturition, a genito-urinary reflex, and, naturally, there is pain in coition. The pain in inflammatory dysmenorrhœa begins at a variable time after the monthly flow is over, sometimes within a few days, as the vascular tension begins to rise, and reaches its acme just before the flow. If this is free the pain quickly subsides in most cases; if scanty, then more slowly and less effectively. The relief of the pain is proportionate to the amount of the flow; or, in other words, the pain is inversely proportionate to the amount of the flow. The main part of the pain is inter-menstrual, and not menstrual. This variety is almost always secondary—that is, it does not come on at or soon after puberty. It is generally secondary to pregnancy, and follows parturition, but still more often abortion. The pathological connexion most usual is the spreading of inflammation, especially septic, from the uterine cavity along the tubes to the peritoneum, in which it may or may not become diffused. It is rare in women who have never been pregnant, unless they have had gonorrhœa, which may infect the peritoneum in the same way. It is very rare, indeed, in virgins, but it may, in rare cases, especially where it chiefly affects the appendages, be secondary to long-standing primary dysmenorrhœa, and especially to membranous dysmenorrhœa, the irritation travelling up the tubes as before described. The pelvic organs also may be simply congested from any cause impeding the return of blood from the vena cava inferior, such as valvular heart disease, liver disease (such as cirrhosis), or, in some cases, lung disease; but in the case of lung and heart disease, the stress will first fall on the liver. In cases of this sort, hæmorrhoids are very common, and testify to the general impediment to the return of the blood. In such circumstances it is fortunate for the patient that the flow is generally profuse.

TREATMENT.

The details will vary according to the duration or stage of the affection. The treatment of acute inflammatory dysmenorrhœa is the treatment of acute pelvic inflammation. This, however, is a matter of a few weeks only in most cases. After this is over the conditions are different. We have to deal with a condition of tenderness and of impeded return of blood. For the former we have fomentations, counter-irritation to the lower abdomen, iodide of potassium, and mercury; for the latter the most important remedies are saline laxatives. And here I must remark that general physicians often, in my opinion, make a mistake in the treatment of this affection, or, at least, of pelvic inflammation. A diagnosis is made of pelvic peritonitis. The word "peritonitis" is remembered, while "pelvic" is forgotten. The patient is put upon opium, and the bowels are kept confined. The result is that the symptoms are merely masked, and the progress towards recovery is arrested. In general peritonitis the great indication is to give the intestines, and especially their serous coat, repose. In pelvic peritonitis (perimetritis) the rectum is the bowel involved and part of the sigmoid flexure, but no more. Constipation keeps up the engorgement, and laxatives

judiciously used relieve it. The indication is to deplete the vessels, and especially those of the pelvis, by saline laxatives aided or not by enemata, especially such as glycerine enemata or suppositories. I have now eliminated all the varieties of dysmenorrhœa except one—namely, that which has so many aliases, and is known as spasmodic, neuralgic, mechanical, obstructive dysmenorrhœa, and the remarkable subdivision of the same, which is known as membranous dysmenorrhœa. In doing so I shall revert to the classification of Carus, who, in 1829, divided dysmenorrhœa into inflammatory or spasmodic. I shall reverse the logical order, and take the membranous variety first.

Demonstration
OF
DR. KOCH'S METHOD OF TREATING TUBERCULOSIS,

Given at the City of London Hospital for Diseases of the Chest, Dec. 1st,

BY G. A. HERON, M.D., F.R.C.P.LOND,
PHYSICIAN TO THE HOSPITAL.

GENTLEMEN,—This demonstration is given at the request of my friend Dr. Koch, who desires that in London and elsewhere his method of treating tuberculosis should, so far as is at present practicable, be open to the inspection of the medical profession. Certain parts of this work are already established upon a basis of clinical observation. Other parts of it remain still to be worked out. I think practically all that is yet known to be of consequence in the work is stated in Dr. Koch's paper, which was published in Berlin on the 14th of last month,—a paper which has excited more widespread interest than any other contribution to medical literature. As a matter of course, you are all familiar with the details of the paper, and I propose to do no more to-night than to touch briefly upon those parts of it which it seems to me are essential to the understanding of the method of the administration of the remedy to our patients, and to a clear apprehension of the obvious results which follow its use in human beings.

The mode of action of the remedy within the body is not yet fully known. This much, however, is certain: tubercle bacilli are not destroyed by it in the tissues. It is upon the living tubercular tissues encircling the tubercle bacilli that the remedy produces its effect, and Koch says of this action that there is, "as is shown by the visible swelling and redness, considerable disturbance of the circulation and, evidently in connexion therewith, deeply seated changes in nutrition, which cause the tissue to die off more or less quickly and deeply, according to the extent of the action of the remedy." "To recapitulate," he goes on to say, "the remedy does not kill the tubercle bacilli, but the tubercular tissue; and this gives us clearly and definitely the limit that bounds the action of the remedy. It can only influence living tuberculous tissue; it has no effect on dead tissue, as, for instance, necrotic cheesy masses, necrotic bones, &c., nor has it any effect on tissue made necrotic by the remedy itself."

In dead tubercular tissue living tubercle bacilli are often found. If the organisms so situated do not escape in some way from the body, they may find a nest for themselves there, and so set up fresh centres of tubercular disease. This fact clearly indicates that the treatment of tuberculosis by this new remedy must be continued for some time. From what is now known, it seems likely that about six weeks will be required to rid patients in the early stage of consumption of the symptoms of their disease. Whether this does or does not mean the complete cure of the disease is at present a question which will be answered conclusively by patients treated in hospital wards. It is in the highest degree probable, as every bacteriologist will understand, that relapses will occur. They must be treated on the principles already laid down by Koch, and their importance as a factor in the ending of the case must be worked out in public hospital practice. This I can say concerning the success which attends the use of this remedy in tuberculosis. I have never seen in a considerable series of cases treated by any remedy such uniformly good results, nor results so favourable to the patients. I do not, in what I have just said, include cases of advanced lung tubercle. Of that class of patients I have seen too few treated in the new way to entitle me to speak of them from my own knowledge. What we have heard and read of such cases in connexion with this treatment leads us to expect at most temporary amelioration of their condition. Attention cannot be too forcibly drawn to what Koch says, in his paper of Nov. 14th, concerning the grave responsibility which will in future rest upon medical men, who leave any means untried to diagnose tubercular disease in its earliest stages. To that end the examination of the sputum ought, he says, to be much more frequently practised than it is to-day in Germany. Speaking from an experience in that direction which is not small, I venture to say that this remark of Koch's applies with at least quite as much truth to England as to Germany. Now that we have the means, in this new remedy, of holding out to our patients, who are in the early stages of tuberculosis—whatever form the disease may assume—the highest probability of a cure of their condition, it will, in my opinion, be a very grave reproach to any medical man who neglects to make an early diagnosis of tuberculosis, and, having done so, postpones needlessly the systematic use in those cases of Koch's remedy.

Koch has said that the action of his remedy consists in the destruction of living tubercular tissue. The destroyed tissue must be thrown off or absorbed. We might, perhaps, feel uneasy as to the consequences of this, even in some cases of lung tubercle in its early stages, and especially in tubercle affecting the larynx, where the swelling, which is part of the effect of the remedy, might conceivably prove dangerous. Experience has, however, shown that, in the considerable number of such cases already treated, no serious risk has arisen. It is a fact that the mucous membranes of the tubercular larynx, while under this treatment, do not swell to such an extent as to interfere very seriously with respiration. Even in advanced cases of lung tubercle, with excavation of considerable portions of lung tissue, there have been no ill effects from the treatment, when it has been conducted with careful attention to the regulation of the dose of the remedy.

The remedy is a transparent, reddish-brown fluid, not unlike brown sherry in appearance. It has no sediment, and when undiluted does not readily decompose. When diluted with distilled water it is, on the contrary, apt to decompose. Bacterial growths quickly appear in it, and it becomes turbid. In this condition it is unfit for use. Its decomposition in dilution is prevented by boiling it, but that process is not necessary if the dilution be made with a half per cent. solution of carbolic acid in distilled water. It should be remembered that both by the frequent boiling of the dilution, as well as by the mixing of it with carbolic acid in the way described, the vigour of action of the remedy is impaired, and therefore fresh dilutions ought only to be used. Experience has, however, shown, I am told, that a 1 per cent. dilution of the remedy made with distilled water, containing ½ per cent. of carbolic acid, remains efficient at the end of one week. The remedy is introduced into the body subcutaneously by means of a syringe which Koch devised for his bacteriological work. It has no piston or washers, and consists of four parts:—An indiarubber ball, with a small hole in it. This ball is fixed upon a hollow metal stem, furnished with a stopcock; into the other end of the metal stem there fits a glass tube, pointed at the further end, and graduated to 1 cc., each division representing a milligramme. Upon the pointed end of the glass tube there fits a hollow needle. In using this syringe the glass tube, with the needle affixed, is detached from the metal stem and filled with absolute alcohol. The metal stem and ball are then replaced in position, and the alcohol gently expelled. Every day before using the syringe I think it well to disinfect the metal stem and the indiarubber ball. Alcohol, however, causes cloudiness in the dilutions of the remedy, and therefore it is necessary to get rid of it as much as possible. For that purpose I wash out the syringe with a little distilled water.

The dose of the remedy has been sufficiently well fixed for all practical purposes. In a healthy man 0·25 cc. produces an intense effect. Koch thus describes the symptoms

produced by that dose on himself, after it had been injected into his upper arm: "Three to four hours after the injection there came on pain in the limbs, fatigue, inclination to cough, difficulty in breathing, which speedily increased. In the fifth hour an unusually violent attack of shivering followed, which lasted almost an hour. At the same time there were sickness, vomiting, and rise of body temperature up to 39·6° C. (103·3° F.). After twelve hours all these symptoms abated; the temperature fell until next day it was normal, and a feeling of fatigue and pain in the limbs continued for a few days, and for exactly the same period of time the site of injection remained slightly painful and red."

1 cc. of a 1 per cent. solution—that is to say, a dose of 0·01 cc. of the remedy—is the smallest dose which affects healthy adults, and the symptoms, more or less marked, following its administration are, in the majority of cases, slight pain in the limbs and a sense of transient fatigue. Only a few persons after this dose show a rise of temperature up to not more than about 100° F. The word "reaction" is used to indicate the symptoms, mild or severe, which follow upon the use of the remedy. In non-tuberculous adults there is no real reaction consequent upon the administration of any dose of the remedy less in amount than 0·01 cc.; therefore, the presence of reaction in the adult after a dose of less than 0·01 cc. of the remedy shows the presence of tubercle in the patient. If in the adult no reaction were obtained by any dose short of 0·01 cc., then it would be certain that the case in question was not one of tuberculosis. This is a law to which no exception has hitherto been found, and it gives the remedy great diagnostic value, which, it seems likely, will be one of its most useful clinical applications. The law applies to both man and beast, and to all tubercular conditions. Already cases have occurred in which the presence of tuberculosis was not even suspected, until the remedy was injected and reaction followed.

The dose of the remedy is regulated in tubercular cases by the age and strength of the patient, and by the conditions of his disease. In children and weak people, and in cases of very extensive disease of the lungs, the treatment should begin with the smallest effective dose, which should be very gradually increased. In fairly strong adults with lupus, joint or gland disease, and also in cases of lung tubercle, where the disease is slight in extent, or where the case is doubtful, a full dose of 0·01 cc. may be administered with safety. But in lung disease, however slight or otherwise favourable the case may be, it is well to begin with a much lower dose. The difference in the conduct of the treatment of lung tubercle and of lupus is that the former is treated with small doses daily, and the latter with large doses at intervals of one or two weeks. Tuberculosis of joints, bones, and glands is treated in the same way as lupus.

A first dose in early cases of lung tubercle in an adult should be either 0·001 cc. or 0·002 cc. If reaction follows this dose, then it should be repeated after the temperature has returned to the normal point. The same dose should be continued in this way until no reaction follows its use. The dose should then be increased by one, or at most two, milligrammes at a time; each dose being repeated until it is found that no reaction follows its administration, and so on until the dose of 0·01 cc. is reached. The dose of the remedy should never exceed 0·01 cc., except as a test to ascertain whether the utmost limit of benefit to the patient has been secured, and this test should be applied to every case. The duration of the treatment in early cases of lung tubercle Koch states to be, as I have already said, from four to six weeks. If after the administration of test doses of the remedy no evidence of the presence of disease is noticed, then the case, Koch says, may "be pronounced cured." I repeat, this statement refers to early lung tubercle only.

As regards the immunity from tuberculosis which may be enjoyed by the human patient after such a course of treatment, no evidence, so far as I know, has yet been brought forward concerning it in clinical records from hospitals, though the protective power of the remedy has been established as a fact by Koch's experiments as regards beasts. The doses of the remedy are prepared as follows: Two dilutions of the fluid are in general use, a 1 per cent. dilution and a 10 per cent. dilution. The 1 per cent. dilution is prepared by putting 0·5 cc. of the remedy into a glass vessel graduated up to 50 cc. The vessel is then filled up to 50 cc. with distilled water containing ½ per cent. of carbolic acid. One cc. of this solution contains a dose of 0·01 cc. of the remedy. Koch's syringe is graduated in milligrammes up to a capacity of 1 cc.; therefore, if 1 c.c. of this 1 per cent. dilution be placed in that syringe, each marked milligramme of it will contain a dose of the remedy equal to 0·001 cc. The 10 per cent. dilution is used exactly in the same way as the 1 per cent. dilution. Every milligramme of it contains 0·01 of the remedy, and by means of this stronger dilution, the larger doses may be given, or, by dilution, any less dose that may be needed. The subcutaneous injection of the remedy is made in the skin of the back, between the shoulder-blades and the spine, or near the lumbar part of the spine. These parts are selected for this purpose because they are less sensitive than most parts of the skin, and because absorption takes place very quickly from their neighbourhood. Before giving an injection the skin around the proposed site of puncture should be disinfected by means of a 1 in 40 dilution of carbolic acid. The needle should also previously to its being used be dipped in a 1 in 20 dilution of carbolic acid.

The reaction in tubercular cases consists in a gradual rise of temperature, beginning three to five hours after the injection. In ten to twelve hours its reaches its acme,—namely, a temperature of 102° to 104° F. It may even rise as high as nearly 106° F. Shivering often occurs as the temperature rises, but it is not a constant symptom. Pains in the joints, increase of cough and expectoration, nausea and vomiting, headache, often frontal in position, and great prostration and drowsiness, sometimes deepening into stupor, are the symptoms of the reaction. In one instance a man who was tuberculous continued in a state of stupor for forty-eight hours, after receiving a dose of 0·01 cc. Slight icterus and a general papular eruption, which has been so very well described by Dr. Radcliffe Crocker in his paper in THE LANCET of Nov. 22nd, are amongst the less frequent symptoms which follow the injection. The fever lasts, as a rule, for from fifteen to twenty-four hours, and is accompanied by an increase in the rate of the pulse and of the respiration. The fever gradually declines, and the temperature falls to subnormal, but often rises again to about 100° F., less or more, and then gradually drops to normal. The patient, as a rule, suffers but little after the fever. Cases of lupus best show the local reaction, but as Dr. Koch has perfectly described all that is meant by the local reaction, it is needless to trouble you now with a repetition of his words. I have also a case to show you which illustrates sufficiently well the early action of the remedy on lupoid tissues.

Remarks
ON
SALPINGITIS AND SOME OF ITS EFFECTS.

BY J. BLAND SUTTON, F.R.C.S. ENG.,
ASSISTANT SURGEON, MIDDLESEX HOSPITAL.

(Concluded from p. 1148.)

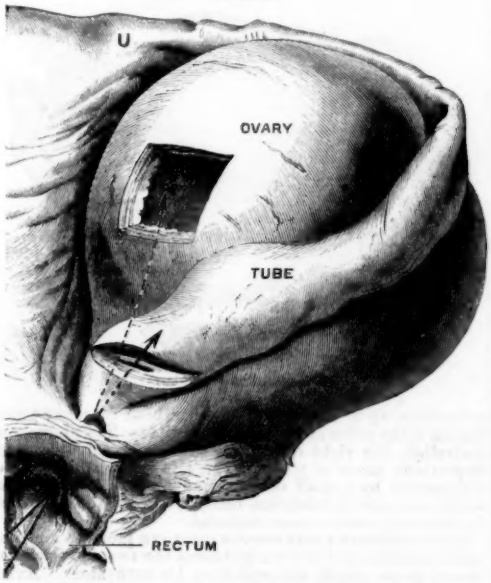
FIVE years ago I drew attention to the new and important light shed on the pathology of inflammation by the discovery of intra-cellular digestion, which tended to show that inflammation is in essence a struggle between irritant bodies of various kinds and leucocytes, a struggle which may be termed "amœbic warfare." Since Metschnikoff made us acquainted with the aggressive powers of leucocytes and the "wandering cells of the mesoderm" many have confirmed his observations, and a recent contribution to this subject by Dr. Armand Ruffer[1] on the "Phagocytes of the Alimentary Canal" is of great interest. *Phagocytes*, or "fighting cells," are of two kinds. *Microphages*, mono- or poly-nucleated cells, are as a matter of fact large leucocytes. These have long been familiar to histologists as epitheloid cells. *Macrophages* are large mono-nucleated

[1] Quarterly Journal of the Microscopical Society, vol. xxx., part 4, February, 1890.

cells, also developed from leucocytes. Microphages and macrophages are each able to engulf and rapidly digest micro-organisms. Macrophages are able to engulf microphages and destroy them. This apparently cannibalistic process seems to take place when the microphage is weakened. The cells found in the infiltrated mucous membrane of a Fallopian tube secondary to gonorrhœa belong to these two types of aggressive phagocytes.

Pyo-salpinx.—In severe cases of salpingitis after occlusion of the abdominal ostium, accompanied, as is usual, with stricture of the uterine end of the tube, the pus is as securely locked up in the tube as it would be in a deep-seated abscess, and it follows the course of an abscess. The walls of the tube, stretched by the accumulating pus, gradually thin, and the inflamed tube becomes adherent to surrounding structures—ovary, uterus, rectum, intestine, or broad ligament. The wall of the tube continues to thin until, on some slight exertion, it bursts. If the pus be discharged into the peritoneal cavity, it establishes rapidly fatal infective peritonitis. Right pyo-salpinx is very prone to open into the rectum. (Fig. 6.) When a pyo-salpinx lies in contact with bowel, the pus it contains becomes

FIG. 6.



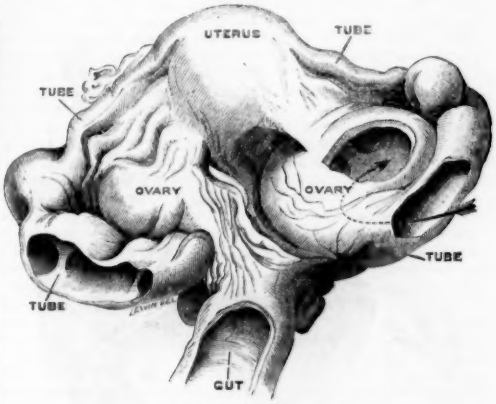
Tubo-ovarian abscess. The tube and abscess each communicate with the rectum by a common aperture.

abominably fetid, due to osmosis of the intestinal gases. The relation of pyo-salpinx to the rectum must be studied in connexion with tubo-ovarian abscess. It must be borne in mind that the normal relation of the tube and ovary are somewhat different from the conventional position represented in anatomical and midwifery text-books.

This conventional relation of the tube and ovary is, as is now well known, purely diagrammatic, and is adopted merely to display the structures in the broad ligament. The ovary is suspended between the folds of the broad ligament, but invested only by the posterior layer, hence it projects from the back of this structure, and has its major axis nearly vertical, the obliquity varying with the position of the uterus. The isthmus of the tube is directed outwards and slightly upwards; but the ampulla descends, passes behind and external to the ovary, and then turns its ostium, surrounded with the fringes, upwards and inwards towards the ovary. Hence the ova, on escaping from the ovary, fall among the fringes of the tube, and the grasping of the ovary by the fringed end of the tube, as related by conventional retailers of traditional physiology, is, as a matter of fact, a fable. This dependent position is not without its influence, for in every case of pyo-salpinx I have examined after closure of the ostium this part of the tube has been dilated with pus, and the walls were thinner than elsewhere. This has an important relation to the changes which arise in the ovary secondary to, and set up by, direct extension of inflammation of the tube. These we may now proceed to consider.

The first effect of salpingitis upon the ovary is to cause thickening of its capsule, and if lymph is effused upon its surface this may organise and extensive perimetritic adhesions result. The effects of this thickening of the capsule are twofold. At first it prevents the rupture of ripe ovarian follicles, and the tension gives rise to considerable disturbance and causes pain; and as the enlarged follicles cannot discharge their contents, it naturally follows that on section an ovary which has long been the seat of peri-oöphoritis will be found largely converted into cystic spaces, and two or more may become confluent and form a cyst the size of a walnut. As such a cyst enlarges and makes its way by absorption to the surface, it not unfrequently comes into relation with and adheres to the dilated pus-containing ampulla of the corresponding tube, which has been brought in contact with it through the restraining influence of the tubo-ovarian ligament. Except that the tube and ovary are in contact, no further change ensues in the majority of cases, but not infrequently absorption takes place, and the dilated ampulla of the tube will communicate with an enlarged follicle or cyst in the ovary and thus give rise to a tubo-ovarian abscess. The communication in such cases is usually small, and barely admits a probe. I have had many opportunities of dissecting such specimens, and find that when a tubo-ovarian abscess communicates with the rectum it is the portion of the abscess lodged in the ovary that invariably becomes the seat of fistula. (Fig. 7.) When a pyo-salpinx or a tubo-ovarian

FIG. 7.



A tubo-ovarian abscess.

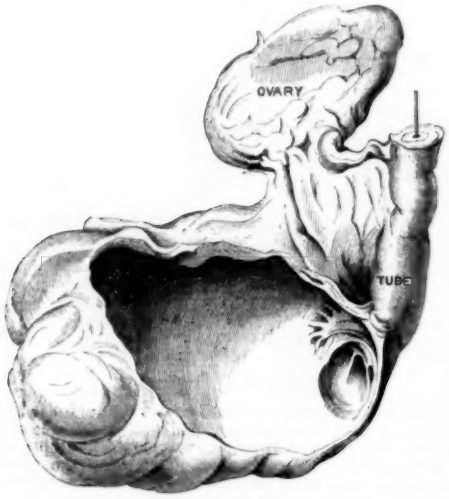
abscess communicates with the rectum, the pus is discharged by way of the rectum at irregular intervals, and is accompanied by great improvement in the patient's symptoms.

Anatomical evidence indicates that when the infective qualities of pus are not very great, a pyo-salpinx may resemble a chronic abscess, and give rise to few symptoms. It is this form of pyo-salpinx which I believe becomes slowly and passively dilated with fluid, and is transformed into a hydro-salpinx. My reasons for believing that as a rule a hydro-salpinx is a late stage of pyo-salpinx may be summarised thus:—1. Hydro-salpinx is not found in acute cases. 2. In many chronic cases hydro-salpinx is found on one side of the uterus, and a progressive pyo-salpinx on the other. 3. The ampulla of a tube will sometimes be dilated into a hydro-salpinx, and the isthmus contain pus. 4. The fluid contained in a hydro-salpinx will sometimes be colourless, but the recesses of the tube contain caseous material and cholesterine. 5. The dilated tube in hydro-salpinx may, as in pyo-salpinx, communicate with an ovarian follicle to form a tubo-ovarian cyst. Tubo-ovarian abscesses and tubo-ovarian cysts must not be confounded with ovarian hydroceles.

Hydro-salpinx.—The persistent course of salpingitis leading to occlusion of the ostium, though very frequent, does

not occur in all cases. Many mild attacks may be conveniently described as "catarrh of the tube," and like a nasal or gastric catarrh subside and leave no trace. If the inflammation is sufficiently intense to seal the ostium permanent damage results, and if, as is so commonly the case, both tubes are affected, they remain throughout life functionless, and often a source of grave danger. In cases of salpingitis sufficiently severe to occlude the ostium the tube is, after the subsidence of the inflammation, in the condition of a blocked ureter; there is no escape for the fluid which is excreted by the glands in its walls, or for the fluid which passively exudes into its cavity. It consequently forms a cyst by retention. The contained fluid is more or less colourless; sometimes it has a greenish tinge, due to the presence of cholesterine. Frequently it is the colour of chocolate. This condition is termed "hydro-salpinx," and may be defined as a Fallopian tube, distended with fluid in consequence of inflammatory occlusion of its abdominal ostium. The changes which arise in the occluded and distended tubes are such as we are familiar with in the case of the gall-bladder, vermiform appendix, or pelvis of the kidney, when they become cysts by retention. The first effect of the accumulating fluid upon the walls of the tube is to stretch them; this continual pressure induces atrophy, the pathological sequence. The epithelium and mucous membrane become thin, lose their character, until nothing but a thin-walled transparent cyst remains, with delicate ridges, representing all that is left of the longitudinal plicæ of the tubal mucous membrane. The shape of a typical hydro-salpinx is very characteristic, and though not invariable, is fairly constant, like that of a legume with somewhat blunt ends; the ovary always occupies the concave border of the legume, and the bent shape of the cyst is doubtless due to the traction exercised by the tubo-ovarian fimbria or ligament. In some specimens the situation of the ostium is indicated by a depression, from which a series of folds radiate, as in Fig. 8,

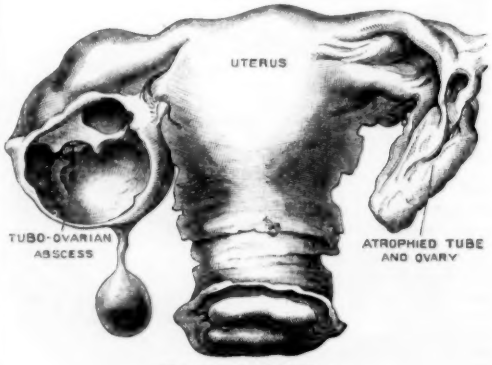
FIG 8.



Hydro-salpinx.

reminding us of the ridges and furrows on the face of a stump after a circular amputation through the thigh or arm. In hydro-salpinx the tubes rarely attain a large size. This is due to the fact that as the tube distends the mucous and muscular coats atrophy. Examples of hydro-salpinx have been described in which the tumour was mistaken clinically for an ovarian cyst; but these specimens will admit of a different explanation. The largest examples of hydro-salpinx which have come under my observation have not exceeded six inches in length, with a diameter of three inches. The walls of these cysts were so thin that the fluid probably leaked through them in the same way that it exudes from a very tense ovarian cyst with attenuated parietes, and is gradually absorbed by the peritoneum. So thin are the walls in some of these hydro-salpinges, that even when very carefully manipulated during operation they rupture; and it is exceedingly probable that these dilated tubes may cure by spontaneous rupture, the cyst walls subsequently atrophying. We know too well that such an event terminates the course of a pyo-salpinx, because it sets up fatal peritonitis; but the fluid in a hydro-salpinx would be tolerated by the peritoneum in the same way that it tolerates fluid from parovarian cysts when they spontaneously rupture. My reasons for such an opinion are founded on the following evidence. I have had many opportunities of making post-mortem examinations of the bodies of prostitutes, many of them having led a life of vice of the lowest form. In most of them double hydro- or pyo-salpinx existed. In three instances in which I examined the bodies of harridans I have found one or both Fallopian tubes represented by an impervious cord and the ovaries atrophied and unrecognisable. This induces me to believe that the frequency of tubal disease between the age of twenty and thirty-five years and its relative rarity after the fortieth year is to be accounted for by the fact that, if the individual survive the dangers incident to an inflamed and distended tube the diseased parts atrophy. The process is illustrated by the specimen represented in Fig. 9. It is the uterus and appendages of

FIG. 9.



The uterus of a harridan.

a harridan, aged forty-four. She has been for many years known to the police as a notorious prostitute. The uterus was shrivelled, the right ovary and tube represented by thin impervious bands of tissue. The left tube and ovary are represented by a small tubo-ovarian abscess, containing a small quantity of colourless fluid, and in the recess formed by the ovary some caseous material.

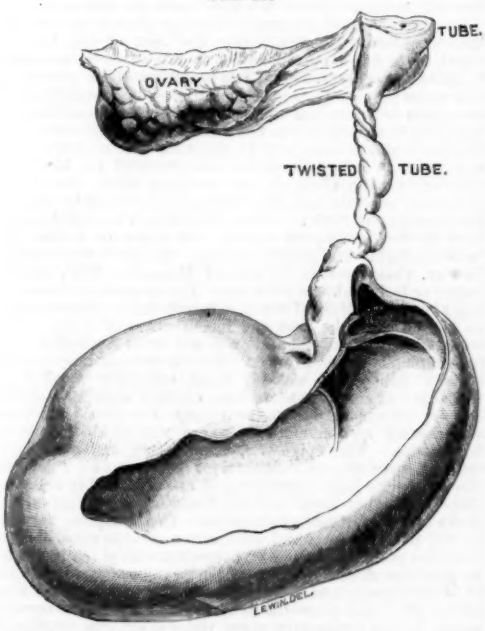
It is well known that ovarian cysts are prone to undergo axial rotation, and in some instances the torsion may be so severe as to detach the cyst from its connexions. Axial rotation occurs in connexion with hydro-salpinx. The only specimen known to me occurred in the practice of my colleague, Mr. Henry Morris. I assisted at the operation, and was able to observe the condition thoroughly. (Fig. 10.) The cyst is a typical hydro-salpinx; the fluid contents were of a chocolate colour. The portion of the tube intervening between the cyst and uterus was tightly twisted three times and a half. The cyst wall was adherent by strong adhesions to the adjacent parts of the meso-metrium and pelvic peritoneum, and it doubtless received its nutrient vessels from this source, for its relations with the bloodvessels which normally supply this part of the tube were thoroughly cut off.

Intermitting hydro-salpinx —It has been stated on clinical evidence that the fluid in a hydro-salpinx may escape through the uterus, the blockade of the uterine end of the Fallopian tube being raised. Such a condition is termed "hydrops tubæ profluens," and the escape of fluid takes place at irregular intervals. Profuse discharges of pus and fluid occur in connexion with pyo- and hydro-salpinx, accompanied by a diminution in the size of the tumour. Such are easily accounted for by the formation of fistula. There is no reliable pathological evidence that such discharges escape into the uterus by way of the Fallopian tubes.

Hydro-peritoneum and tubal disease.—It has been frequently pointed out that one important advantage accruing

to the individual from occlusion of the abdominal ostium of the tube in septic salpingitis is great diminution in the risk of the inflammation extending to the peritoneum. Apart from this, even mild forms of tubal catarrh, not sufficient to give rise to fatal peritonitis, nor even severe enough to seal the ostium, may cause what is called hydro-peritoneum. Mr. Alban Doran[2] has especially investigated this condition and discussed its probable causation in an admirable paper communicated to the Obstetrical Society of London. Hydro-peritoneum he defines as a collection of fluid in the peritoneal cavity which cannot be referred to any tangible organic disease. By this we may presume he means that the accumulation is not due to the ordinary causes of ascites, such as heart, liver, or renal disease. The definition is purely clinical; Mr. Doran is of opinion that hydro-

FIG. 10.



A hydro-salpinx with twisted pedicle.

peritoneum is caused by salpingitis of a mild type with an unobstructed tube. It is easy to understand that the constant irritation caused by inflammatory products dripping from the tube into the peritoneal cavity would induce an exudation of fluid. The subject is one of some importance, and demands more attention than it has yet received at the hands of those who conduct post-mortem examinations. Its clinical import is obvious enough.

The effects of salpingitis we have considered by no means exhaust the list; such important conditions as *tubercular salpingitis, papilloma of the tube*, and *tubal pregnancy*, must remain for some future occasion.

[2] Papilloma of the Fallopian Tube and the relation of Hydro-peritoneum to Tubal Disease: Obstet. Soc. Trans., vol. xxviii., 1886.

DISEASED MEAT.—A general dealer of Manuden, Essex, has been fined at the Guildhall Police-court £10 and £2 2s. costs for sending for sale to the London Central Meat Market four quarters of diseased cow beef totally unfit for human food.

NORTH-EASTERN HOSPITAL FOR CHILDREN, HACKNEY-ROAD.—The congregation and friends of St. Thomas's-square Chapel, Hackney, maintain two cots at this hospital. In aid of this object a sale of useful and fancy articles was opened last week by Mrs. Garrett Anderson, M.D., in the schoolroom.

ABSTRACT OF THE

Bowman Lecture.

BY J. W. HULKE, F.R.C.S., F.R.S.,
SURGEON TO THE MIDDLESEX HOSPITAL, AND TO THE ROYAL LONDON OPHTHALMIC HOSPITAL.

(*Concluded from p. 1146.*)

"DEPRESSION," which, except by Oriental oculists, who yet employ it, had fallen into disuse, was in 1854 revived by Sir William Bowman, and tried by him in the Royal London Ophthalmic Hospital, and Mr. Hulke cited a very accurate and interesting note of a case recorded in Sir William Bowman's own words. In 1860 he and his colleagues at the Royal London Ophthalmic Hospital adopted the flap method of removal with the aid of traction, and himself invented a scoop which is known by his name, and is still in use in exceptional cases. In the Ophthalmic Hospital Reports, vol. iv., 1865, he published a paper on Extraction of Cataract by a traction instrument, with iridectomy, with remarks on Capsular Obstructions, in which he embodied the steps, principles, and difficulties of the operation, the accidents that might occur, the course and treatment, and the results by that method obtained by himself up to that date. In secondary needling operations, he pointed out, how by the judicious use of two needles the perilous drag upon the ciliary processes might be averted, one serving as a point from which the other needle works, and so taking all the strain off the peripheral attachments of the capsule. In the second portion of the paper he refers to the detection and treatment of capsular opacities due to accretion of degenerative products, or wrinkling of the capsular membrane, and ends with a valuable summary of his conclusions in relation to the subject of "scoop extraction." Up to about 1850 extraction was generally performed in London in the manner now designated "flap extraction," to distinguish it from a later procedure devised by A. von Graefe. The operation then demanded much greater dexterity than at the present time; no speculum was used, but the operator himself raised and fixed the upper lid and the eyeball with his finger-tips, while his assistant fixed and depressed the lower lid. The knife used, although called Beer's, more nearly resembled Sichel's. In London, so far as the lecturer was aware, Sir William Bowman was the first surgeon who employed chloroform "in extraction." In the first case the eye was lost, owing to the violent straining in vomiting causing extrusion of the vitreous and retina, with choroidal hæmorrhage. So serious a disaster would have deterred many men from the further trial of chloroform, and its advantages in respect of the performance of the operation were so manifest that Sir William Bowman persevered in its use, and, in order to inspire confidence in his patients, he experimentally inhaled it to complete anæsthesia himself. His conviction of its extreme usefulness in extraction was soon shared by others, and its employment quickly became general. One inconvenience attending the use of Beer's knife was the difficulty of making with it a uniformly, curved, regular section of cornea. With the narrower knife devised by Sichel, the operator could regulate the corneal incision with great nicety, and in Sir William Bowman's hands this knife quickly replaced the so-called Beer's knife previously in general use. The excellence of the knives made by Suers of Paris, and exhibited by him at the International Exhibition in Hyde Park, was then unrivalled. Mr. Hulke speaks of seeing him in the theatre of the Moorfields Hospital chop with one of these knives a piece of close-textured, hard bone, so severely as to very distinctly score its surface, and then pass the same knife, its edge perfectly uninjured, to Sir William Bowman, who then and there used it in a couple of extraction operations, so admirably was the metal tempered. Later still, Sir William Bowman used the yet more narrow knife, known as Graefe's, and adopted the form of extraction which bears the name of this illustrious oculist. Some cases of detached retina were treated by Sir William Bowman at the Royal London Ophthalmic Hospital in 1864 by direct puncture of the sclerotic over the site of detachment, and then turning the needle slightly round so as to allow the fluid to escape along its shaft. The results, however, did not encourage an extensive trial of this method. On the concep-

tion that the accumulation of fluid at the exterior of the retina, between it and the choroid, indicated the existence there of a partial tension greater than that on the inner surface of the retina, Sir William Bowman founded the idea of making an opening in that membrane which might cause equalisation of the pressure on its two aspects, from which a subsidence of the uplifted retina might be expected. The immediate effects were in some instances an appreciable enlargement of the visual field, referable probably to the unmasking of normal retina previously hidden by the elevated detached portion; this, however, was generally only transitory. Thinking that a permanent opening might render the improvement lasting, this was effected, but without better results. An account of these trials appeared in the Ophthalmic Hospital Reports, vol. iv., 1864.

The treatment of glaucoma by iridectomy instituted by Albrecht von Graefe was taken up with deep interest by Sir William Bowman; he commenced at once an extensive trial of the operation at the Royal London Ophthalmic Hospital, which ceased only with his retirement from the active staff. His great example and influence, together with those of colleagues, soon won for it here the general assent it yet retains. His publications on the subject are a paper on "Iridectomy in Glaucoma," in the *Medical Times and Gazette*, 1860; "On Glaucomatous Affections and their Treatment by Iridectomy," the *Association Journal*, Oct. 11th, 1862, and "Glaucoma and Iridectomy," Ophthalmic Hospital Reports, vol. iv., 1863; to which may be added a series of "Cases of Misplaced, Malformed, and Dislocated Lenses, in some of which Glaucomatous Symptoms Developed," Ophthalmic Hospital Reports, vol. v., and also his Remarks in the Discussion on Glaucoma in the Section of Ophthalmology, at the annual meeting of the British Medical Association, held at Cambridge in 1880.

In concluding, Mr. Hulke dwelt upon the great obligation of the Society to Sir William Bowman for his fostering, generous care in its early years, and the valuable addresses with which he opened its first three annual sessions. The esteem in which Bowman and his works were held wherever ophthalmology has votaries was shown by the acclamations which greeted his election to the presidentship of the Section in the International Congress held in the metropolis in 1881.

SPINAL CARIES; PRESSURE PARAPLEGIA; RESECTION OF LAMINÆ.

BY HERBERT W. PAGE, M.C.CANTAB., F.R.C.S.ENG.,
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HOWEVER hopeless may be the prospects of good from the operation of trephining the spine in most cases of traumatic lesion of the spinal cord, there can be no question that considerable success has attended it for the relief of pressure symptoms in the course of tubercular disease. Thus, of the thirteen cases collected by Mr. Thorburn last year in his valuable work on the surgery of the spinal cord, there was most obvious relief in seven, in three there was none, in two the operation apparently did harm, while in the remaining case a relapse followed the very marked improvement which the operation had induced. The last case referred to in his table was one by his colleague, Mr. Wright of Manchester, in 1889, and as far as I can find there have been published since that time nine cases: two by Arbuthnot Lane,[1] in both of which there was marked relief; one by Richardson,[2] fatal; one by Thompson[3] of Hull, in every way successful; two by White,[4] in one of which there was relief, the other being fatal; and three by Kraske,[5] related at the last Congress of German Surgeons, in one of which there was relief, in the second case temporary relief only, as also in his third, with relapse, however, following in two, and death from phthisis in seven, months.

Here are in all twenty-three cases, inclusive of my own, in twelve of which the operation was productive of good; or, if we exclude Mr. Lane's first case, because from a later note[6] the improvement given by the operation had not been maintained, nearly 50 per cent. in which the operation was clearly beneficial, and in some was unquestionably the starting point towards recovery. If it were certain that these were all the cases in which the operation had been done, the record would be distinctly promising, but it is more than ever essential in so serious a matter that unsuccessful, even fatal cases, shall be published. I am told of two cases where there was no relief, which will presently be published, and statistical conclusions from the twenty-three cases now on record are therefore premature and valueless. Furthermore, it is no less imperative, as witness the first case of Mr. Lane, that the successful cases be not published too soon, or at any rate that some record be furnished of their subsequent condition and progress. The case I have here to publish was one in which no relief was brought by the operation. The reasons for this will become obvious in the course of the history.

George ——, aged twenty, a messenger, had been admitted into St. Mary's Hospital under the care of Dr. Lees in April, 1889, and was transferred to my wards with a view to operation early in July. His health had been good until five years previously, when he fell from a van and struck the upper dorsal region of his spine. He did not think he had been hurt, and it was not until two months afterwards that he began to have pain in the back and to feel ill. It appears that a Sayre's jacket was provided for him soon afterwards, but there is no evidence when the spinal deformity was first noticed. Suffice it that when he became an in-patient in 1889 he had a projection or so-called curvature in the mid-dorsal region, the angle of which was between eighty and ninety degrees. He gave this further history, that towards the end of December, 1888, he had begun to feel weakness in his legs. This gradually increased, and about the middle of March, a month that is before coming to the hospital, he first had incontinence of urine. This recurred occasionally, but it was not until April 20th that he completely failed to walk. His whole muscular system seemed flabby and wasted, more especially marked in the legs, where also there was distinct rigidity—of the left leg rather more than the right. The knee-jerks were exaggerated and clonic, and there was ankle-clonus on both sides. The epigastric, cremasteric, and abdominal reflexes were absent. Sensations of pain and touch in the legs were both impaired and unquestionably delayed. Over the lumbar back and the lower abdomen there was also some impairment of sensation. In attempting to walk he had to be held up, and was quite unable to raise his feet from the ground. Iodide of potassium was given him, and he was kept at rest in bed. His symptoms showed no signs of improvement, and I rather gather from the notes that during May and June his general tendency was to become worse, for the limbs were more rigid, there was occasional incontinence of urine, and his voluntary power of moving his legs was decidedly not so good. The derangements of sensation were more or less variable both in character and degree, and on no two days were they exactly the same. He occasionally had tinglings down the thighs and feet, but otherwise he was free from pain. Once or twice his evening temperature rose to 100° F., but commonly the range of it was not higher than 99°. There was no material change in his condition when he was transferred to the surgical ward on July 11th. The spinal projection involved the vertebræ from the fifth to the tenth dorsal, the apex of the angle being formed by the eighth. Above this point there was also some lateral curving to the right. There was marked rigidity of the dorsal spine, and the vertebræ seemed ankylosed together at the seat of the angle. There was slight tenderness on percussion, but no other pain at the part. Nevertheless, he could not sit up without support. It being believed that the symptoms were mainly due to a pressure lesion of the cord at the site of the spinal bend, and it being, moreover, evident that there was no sign of change for the better, I agreed with Dr. Lees in the propriety of opening the spinal canal, with a view to relieve the cord from injurious pressure, either of inflammatory products, or of the vertebral arch in the now greatly deformed position of the spine. And even though some of the symptoms were rather suggestive of secondary degeneration than of a circumscribed lesion, it was thought that no harm could ensue from removing the cause of local pressure, where certainly the mischief had begun. Accordingly the spinal

[1] British Medical Journal, April 20th, 1889, and THE LANCET, July 5th, 1330. [2] Brooklyn Medical Journal, 1889, p. 401.
[3] THE LANCET, vol. ii. 1889, p. 315. [4] Annals of Surgery, vol. ix., p. 425.
[5] Centralblatt f. Chir., No. 25, 1890.

[6] THE LANCET, vol. ii. 1889.

canal was opened on July 30th, Mr. Silcock assisting me. A longitudinal median incision, at the centre of which was the spinous process of the eighth dorsal or most prominent vertebra, five inches in length, together with two horizontal incisions through the muscles only, one to the left at the upper end of the longitudinal incision, the second to the right at the lower end of it, and the rapid dissection up of the muscular mass on either side of the spine, cleared the bones. There was next to no bleeding, and not a single ligature was required. The periosteum having been stripped back, two spinous processes of the seventh and eighth dorsal were removed with bone forceps, and then with a double Hey's saw the laminæ of these same vertebræ were divided. All the bony parts here were firmly ankylosed together and the bone was decidedly sclerosed. With chisel and mallet the remainder of the work was finished and the dura was exposed. It was not adherent to the bone and in itself showed no pathological changes. There was no undue projection of it, and therefore there seemed to be no call for laying it open. Immediately to the right, however, of the exposed dura there was seen in the bone the point of a focus of inflammation and softening. A probe passed into this gave exit to a small quantity, say a couple of drops, of pus-like caseous matter. The probe was now passed without difficulty along a bony sinus which led to the front of the spinal canal, obviously into the bodies of the vertebræ, into a place where it would have been absolutely impossible to reach any mass of tubercular matter without injury to the spinal cord. Reluctantly, therefore, the wound had to be closed, and the parts having been thoroughly cleansed and dried, the muscular and cutaneous structures were brought into accurate apposition with deep and superficial sutures. It should be stated that during the removal of the bony arch, and especially when the mallet was being used, there were considerable muscular twitchings of the legs.

The patient bore the operation well, and was free from pain after it. Nor, with the exception of slight tension inflammation in the line of one of the deep sutures, was there any interference with the immediate and complete healing of the wound. It was dressed for the first time on August 4th. So far all was well; but on the day after the operation and up to the 6th his urine had to be drawn off by catheter, and from this date onwards it was passed involuntarily and without his knowledge. He never completely regained power over his bladder while he was in the hospital, and on September 27th there were evidences of some, not very severe, cystitis in ammoniacal alkalinity, pus, mucus, and bacilli. From the day of the operation until Aug. 9th his temperature was high, never below 99°F. in the morning, and up to 101° on the evenings of the 2nd and 3rd, and even 103° on the 6th and 7th, and 102° on the 8th. Thereafter it was normal throughout, the 20th, 22nd, and 23rd of the month of August excepted, when for unknown reasons it rose to 101·5°. The rise directly after the operation was not due, as far as one could see, to anything wrong with the wound. For the first two days after the operation he was annoyed with tickling sensations in both his legs and in his soles, and with twitchings in the muscles of the right leg. These twitchings drew up this leg—flexing it, that is, at both thigh and knee—and so interfered with the needful quietude that it had to be fastened down with a bandage. This jumping of the legs gradually diminished, and had practically disappeared by Aug. 16th. It was thought on this day that the knee-jerks were not so exaggerated as formerly, and that the ankle-clonus was likewise less. He had, however, no voluntary power of moving his legs, and it was abundantly clear that the operation had done him no good. On Aug. 14th a plaster jacket was applied, and on the 17th he was allowed to be up in a chair. Some numbness and hyperæsthesia, which he complained of at this time in his arms and hands, were due, I think, to pressure from the plaster jacket, and did not continue. From the day of his getting out of bed he seemed distinctly to improve, for he made fewer mistakes in the localisation of sensory impressions, and had certainly some power of moving his legs, the right rather better than the left. One curious mistake which he frequently made was the reference of the sensation of touch on the right thigh and leg to corresponding positions on the left. It was noted on Aug. 29th that whenever he tried to move his right leg the left was invariably moved with it, to a lesser degree, but quite involuntarily. The jacket became uncomfortable, and when it was removed on Sept. 9th it was found that a small pressure-sore had been made, and this unfortunately prevented the application of another until Oct. 10th. The absence of a jacket was clearly detrimental to him, for in this period he was more troubled with jumpings of the legs, and the improvement which had been noted both in motion and sensation came to a standstill—rather, perhaps, there was retrogression.

When he left the hospital on Oct. 19th he had to some extent regained power over his bladder, and his urine no longer ran from him; but in all other respects the amount of improvement was, to my mind, trifling, although he himself was glad at being so much better. In January of this year he was again in the hospital for a few days, in order that he might be fitted with a felt jacket. He was then decidedly better in every way, and the improvement was even more marked when I saw him at his own home in the summer. My last opportunity of seeing him was on Oct. 29th, when he came to the hospital to be examined. With the aid of two sticks he had come by himself by train, walking at least a quarter of a mile on the way. He lifts his feet well off the ground in walking, and can even go without his sticks. The left leg feels weaker, and is obviously more defective than the right. In this leg there is still a certain amount of rigidity, and it is colder and smaller than the right. Ankle-clonus can, moreover, be readily elicited, and occasionally troubles him in walking. The left knee-jerk is also much increased, and is decidedly clonic in character. There is no ankle clonus on the right leg, and the knee-jerk, although more than it should be, is much less than that of the left. The plantar reflex is natural, and there is no impairment of ordinary sensation. There is some slight frequency of micturition, but he has complete command over the bladder. I was unable to see any of his urine, but he says there is no sediment or smell, and I should judge that there is now no cystitis. He is free from pain, and there is no spinal tenderness. The deformity remains exactly as it was, and the gap which was made by the operation is perfectly filled with bone. He bore firm pressure on the part without the least sense of discomfort. He is in good health, and there is no indication of active caries, though I am sorry to say that he thinks his left leg is not quite as well as it was. At any rate, it has not improved in the last six weeks.

This case must obviously be classed with those in which no relief was given by the operation; but unless the increased bladder trouble ought to be so accounted, no apparent harm was done by it. The question will very rightly be put whether the operation should ever have been done at all. In favour of it was the long history of increasing weakness until there was almost complete paraplegia; the practical certainty that the symptoms were due to a pressure lesion; and the hope held out by the history of other cases that removal of the cause of the pressure might rapidly promote a cure. Against these were to be set the severity of the operation itself, and, above all, the knowledge that so many of these cases of pressure paralysis in the course of spinal caries undergo spontaneous recovery in course of time. But, looking back on things as they were presented to us when the lad first came under my care, I am of opinion that the operation was justified, and was one which could be properly advised. No man could have foreseen the precise condition which was found on opening the spinal canal, and it is eminently unfortunate that in this particular instance the position and character of the pathological changes rendered relief beyond attainment. I do not see how one could have gained such access to the front of the spinal column, whither the probe led, as to deal with the caries in that position or with the inflammatory products there collected, and I believe the right course was adopted when the wound was closed. Any gouging away of bone to reach the front of the spine would have exposed the cord to great additional danger, and seriously imperilled the chances of recovery, if not indeed the patient's life. The case, therefore, is worthy of record on this ground only, as showing what sort of difficulty the surgeon may have to encounter after the spinal canal has been entered. As to the operation itself there is little to be said. It required care, but presented no great difficulties. The wound healed as wounds should heal; and it is satisfactory to know that there has been no weakening of the spinal column, and that the gap has been filled up with new bone. I should be sorry if the history of

this case were to be a bar to operation in any case which may seem suitable for it, but we need to know all about such cases, and, successful or not, their publication is necessary. And although in this instance the trephining of the spine was merely a sort of episode in the course of a history of pressure paraplegia, the case is assuredly not without interest, or unfit to be numbered with those which have been already placed on record.

INTENSE HYPERÆSTHESIA OF THE STOMACH, ASSOCIATED WITH AN EXCESSIVE FORMATION OF ACID.

BY J. CLEASBY TAYLOR, M.B., C.M.EDIN., M.R.C.S.

I AM induced to relate the following case on account of the long duration and severity of the symptoms and their relief by very simple remedies.

G. F——, twenty years of age, occupied in a London office, came under my care on Jan. 23rd last, with a history of intense abdominal pain of a duration of two years and a half, unknown as to its cause and unrelieved by any remedy. The family history was very good, but with a tendency to gout on the father's side. Before the commencement of the present illness there was nothing particular in the history of the patient. Without any exciting cause he began to be troubled with pain in the epigastric and left hypochondriac regions. The pain from the beginning was always severe, with a tendency to be worse during the night, and to disappear or abate during the day. Sometimes he would be free for a week or more; but the symptoms always returned with their usual vehemence. Latterly the intensity of the pain seemed to have been increasing. The locality appeared to have been always the same, and to be represented by the outer two-thirds of the left costal margin and downwards for about two fingers' breadth. If a paroxysm increased in violence, pain began to be felt in the lower dorsal region, and as it grew worse pain spread upwards in a line along both sides of the spinal column, and when at its worst the sensation was described "as if a red-hot needle was being run up and down the middle of the back." This was localised as being directly beneath the neural spines of the vertebral column. There had never been any increase of pain on pressure, nor had pressure ever relieved a paroxysm. During the short intervals of pain he would be fairly well, and put on flesh, but on the return of pain appetite and sleep would go, with consequent loss of weight. There was no history of jaundice, vomiting, nausea, distension, hæmatemesis, flatulence, or waterbrash, and most emphatically was I informed that never had it been possible to detect any relation between pain and food, nor had different varieties of diet affected the pain in the slightest. The only other point in the history was that in June, 1889, there had been an ill-defined febrile attack lasting some three or four weeks, and since then the pain had been more or less constant, and the patient gradually going downhill.

On examination I found G. F—— to be 5 ft. 10 in. in height, and to weigh 124 lb. The features had a blue, pinched appearance the hands were blue and cold, the skin dry, harsh, and shrivelled, with rather a tendency to eczema. His expression, with the lines of pain, and a stoop he had contracted gave him the appearance of an elderly person. The tongue was fairly clean, giving no indication; the temperature was subnormal, even in the evening; the pulse was 80, rather feeble. There was a tendency to asthma, but no cough or nocturnal perspiration. The appetite was bad, and there was also a tendency to constipation. The circulatory system was found normal; no marked anæmia. There was perfect expansion of the whole chest; no sign of any deformity; no dulness on percussion, but on auscultation rhonchi were heard here and there over the whole of the lungs; vocal resonance and fremitus were normal. Inspection, palpation, and percussion of the abdomen failed to elicit anything; pressure certainly had no effect on the pain. The urine was straw-coloured, neutral, and slightly acid; sp. gr. 1010. On coming under my care, I tried various tonics, antacid, antiseptic, anti-spasmodic, and cathartic remedies, in conjunction with various diets, but all to no purpose; in fact, the patient grew gradually but steadily worse. Opium by the mouth having no effect, on Jan. 27th I began hypodermics of morphia; at first one-sixth of a grain, but soon one-fourth of a grain was required, and repeated two, three, or more times in the twenty-four hours. Even then the greater part of the time there was more or less pain. The aspect of the tongue all this time remained the same, and, as far as could be judged, food had no effect on the symptoms. As this line of treatment did not appear very successful, I proposed to wash out the stomach, but the patient after the first time refused to submit to it again. In the beginning of February I commenced to feed the patient by the rectum in order to see whether giving the stomach a complete rest would give him relief. Commencing with enemata early one morning, when free from pain, he was easy all that day, but about six in the evening a feeling of emptiness was experienced, and, yielding to the patient's entreaties, I allowed him a small quantity of weak beef-tea, but no sooner was a tablespoonful swallowed than he was again writhing in pain. Under the influence of a hypodermic, in three or four hours the paroxysm had somewhat abated, and a drink of aerated water was given, and again a severe paroxysm came on; this, though relieved by a hypodermic, yet lasted four or five hours. Early on the following morning I gave him a drink of cold water, and again a paroxysm of equal severity was brought on. Thinking over these symptoms, I decided to give an antacid, but in much larger doses than formerly prescribed. I gave bicarbonate of soda, and commenced with sixty grains, the effect was simply astonishing; in two or three minutes there was an eructation and total relief of pain. After this the hypodermics were stopped, and sixty grains of the antacid given whenever the symptoms recurred. The result was always the same—viz., relief in from three to five minutes with an eructation, but the length of time between the doses varied from thirty minutes to four or five hours. For the first few days eleven or twelve doses in the twenty-four hours were necessary, and after a week eight or nine were the average. The greater number were taken during the night, and these between 1 A.M. and 4 A.M. The result was the same whether no food was taken after 3 P.M., or whether food was taken as late as 9 or 10 P.M.

Having under my care at this time a patient suffering from persistent neuralgia of the posterior tibial nerve who had been completely relieved by a few doses of sulphonal, I gave G. F—— on Feb. 24th twenty grains with a very good result. Instead of five or six doses of the antacid being required during the night, a night of almost unbroken sleep was obtained, and no antacid was required on the following day. The sulphonal was continued every night, but in diminished doses. I found ten grains were sufficient, with an occasional dose of antacid; but if diminished further or omitted, then three, four, or more doses of the antacid had to be given during the night; further than this I could not get, and my patient again seemed to come to a standstill. Finally, in the beginning of March, I fell back on my old treatment of an antiseptic, and gave three-minim doses of carbolic acid three times a day two or three hours after food. Immediately this had the desired effect. After one day's use no antacid was required; after two or three nights the sulphonal was also omitted; and in a week's time the medicine was only taken once a day, more as a precaution than being required. The diet, which previously was limited and rigorously enforced, was now relaxed, the patient being able to take without harm a greater quantity and variety of food. In addition, he began to increase in weight; the asthma, the old haggard look, the stoop of the shoulders, the blueness of the hands, the harshness of the skin, and the subnormal temperature, all disappeared; in fact, he grew into a youth again almost unrecognisable by anyone who had known him when ill. So far there has been no return of the symptoms, and he has been able to return to his work, from which he had been almost constantly laid aside for nearly three years.

The diagnosis and treatment of this case presented considerable difficulties. The patient in his illness of two years and a half had been in many and various hands, who had diagnosed tubercular disease, malaria, hysteria, &c., and who had suggested many remedies, all to no purpose. Finally, change of air to a warm climate, the *ultima spes* of so many cases, was thought to be the only chance. On observing the case I felt able to eliminate gastric ulcer, gastritis, and glandular disease of the posterior mediastinum. I was much more suspicious of glandular disease in the

neighbourhood of the solar plexus or pancreas. I could also eliminate the liver, spleen, and kidneys. Finally, I came to the conclusion that I had to deal with some functional disease of the stomach, but the remedies I tried seemed of no effect. All I appeared able to do, until the incidents of the beef-tea, aerated water, and cold water gave me the clue, was to keep the pain down with hypodermics; these incidents decided me to give much larger doses of an antacid than I had hitherto done. The effects of drachm doses of the antacid were simply marvellous, yet any less dose had little or no effect; other antacids in similar large doses were given, but none of them acted with the rapidity or gave the same relief as the bicarbonate of soda. On two occasions whilst taking the antacid the patient vomited a large quantity of watery fluid, sour smelling, each time the ejected matter being in much larger quantities than the fluid previously imbibed. The action of the sulphonal appeared not so much to give sleep as to act as an analgesic, and thus allow natural sleep, for if it was left off for a night, or diminished below ten grains, sleep was obtained, but was more broken by attacks of pain, and more doses of the antacid had to be taken in the night, but not during the following day. The action of the carbolic acid was, no doubt, an analgesic and antiseptic, preventing the fermentation that was probably the cause of the abnormal quantity of acid. When I first saw the patient the same doses of the acid appeared to have no effect, yet when given later its action was manifested after the first day. One other point of interest about the case was that opium, chloral, cannabis indica, and belladonna, whether hypodermically or by the mouth, practically failed to have any effect on the pain, and if any it was only of a very temporary character.

Las Palmas.

GASTRO-ENTEROSTOMY.

BY T. KILNER CLARKE, F.R.C.S. ENG.,
HONORARY SURGEON TO THE HUDDERSFIELD INFIRMARY.

THE following case of gastro-enterostomy, though unsuccessful, is more illustrative of the difficulties of the operation and its after dangers than the successful one I published some few months ago, the subject of which is still, ten months after the operation, in the enjoyment of good health.

Mrs. S——, aged thirty-six, a spare, dark-eyed woman, had been suffering from gastric troubles for a year, when, in consultation with Mr. Haigh of Meltham, her medical attendant, I first saw her on May 6th, 1890. During this time she had suffered much from vomiting, and had had several attacks of hæmatemesis, at times considerable in amount. For the few days previous to my visit everything she had taken was rejected. There was a tumour the size of an orange in the situation of the pylorus—i.e., on the right edge of the mesial line and extending down to the level of the umbilicus; the stomach was small, but the other organs of the body appeared healthy. The case seemed to us to be a very suitable one for either pylorectomy or gastro-enterostomy. Using a mixture of chloroform (one part) and ether (two parts) as the anæsthetic, administered by Dr. Scougal, and assisted by Mr. Haigh and Mr. Marshall, I operated on May 13th, 1890. A three-inch median incision reaching as far as the lower edge of the umbilicus exposed the lower border of the stomach and the great omentum. The tumour, which was found to be the enlarged and thickened pylorus, was firmly adherent to everything in its immediate neighbourhood. Its size and adhesions and the contracted state of the stomach rendering pylorectomy impossible, I proceeded to the alternative operation of gastro-enterostomy. The jejunum not being visible, I pushed aside the great omentum, and, turning up the lower border of the stomach, saw it lying beneath the transverse meso-colon and arising from the spine on a level with the umbilicus. Making a rent in the meso-colon I brought up the intestine, emptied some six inches of it, and isolated the emptied portion from the rest of the gut; then dropping the jejunum back into the abdomen I made an incision into the anterior wall of the stomach, an inch in length, parallel to and about an inch and a half above the greater curvature, and inserted the decalcified bone plate. The second plate was then fixed in the jejunum. On attempting to bring the two plates into apposition so as to tie the corresponding threads, I found it could not be done, as the contracted size of the stomach and the pyloric adhesions prevented my bringing the stomach wall sufficiently outside the abdomen. I therefore took out the stomach plate, sewed up the incision with a double row of Lembert sutures of fine silk, made a new incision in the posterior wall of the stomach, introduced the plate afresh, and readily brought it into close apposition with the jejunum plate. The corresponding threads were then tied and the abdominal wound closed. A towel folded to form a pad was bound firmly over the dressings and removed after forty-eight hours. For three weeks after the operation the pulse kept under 100, and 99·6° was the highest temperature. The progress of the case was briefly as follows.—First day: Very little pain; frequent slight hæmatemesis. Nutrient enemata of beef-tea and brandy every four hours.—Second day: Hæmatemesis going on; very good night; no pain.—Third day: Very good night; vomited every two or three hours till 2 P.M., when distension came on with pain in the chest and difficulty of breathing. This was relieved by fomentations and a clyster of glycerine (two ounces). After this the patient retained wine whey in small quantities and a little hot tea.—Fourth day: Wine whey and chicken broth.—Fifth day: Vomited several times; a good deal of pain in left side of the abdomen, was relieved after the application of a mustard plaster, and the appearance of some offensive discharge from the lower end of the abdominal incision. The wound was opened a little, and a couple of short drainage-tubes were introduced at its upper and lower end.—Sixth day: No vomiting for the last three days; wound discharging freely. Having fluid food and a nutrient suppository night and morning.—Eleventh day: No sickness; appetite very good; was given boiled mutton; upper tube removed.—Twelfth day: Second tube removed; slight vomiting at 8 A.M., but afterwards very well up to afternoon, when the artificial opening between stomach and intestine seemed to close suddenly. While being fed the trickling sound of fluid passing through the opening which was distinctly audible to anyone standing by the bedside whenever the patient took any fluid food and the patient's sensations of it abruptly ceased. At 10 P.M. she vomited some twenty ounces of fluids, and from this time till her death on the thirtieth day after her operation all food taken was rejected. No necropsy was permitted, and the cause of the sudden closure of the artificial opening must remain uncertain. In two at least of the failures of this operation closure of the opening has occurred. To prevent this it would be well to sew together by a continuous fine silk suture the cut edges of the serous and mucous coats of the incised viscera, and to make larger incisions into the viscera. Operators by the old method made incisions two inches in length.

Huddersfield.

ACUTE INTESTINAL OBSTRUCTION BY INTERNAL STRANGULATION; LAPAROTOMY; CURE.

BY EDWARD J. CAVE, M.D. LOND.,
SURGEON TO THE CREWKERNE HOSPITAL.

THE operative treatment of intestinal obstruction has of late years been abundantly discussed, and the lines of practice are now pretty definitely laid down. The tendency has been more and more in the direction of early surgical interference, so that now few surgeons would countenance delay longer than is necessary for a confident diagnosis; and even in difficult and obscure cases of acute abdominal trouble, where the diagnosis is still but a matter of probability, far greater disaster results from procrastination than from early operation. An experience of six years as resident medical officer in provincial hospitals has brought a fair number of patients suffering from acute obstruction under my notice, of whom some have died without surgical interference, and two have recovered when recovery seemed past hope; while of those submitted to laparotomy for obstruction from any cause whatsoever, not one has recovered save by the formation of an artificial anus at the anterior abdominal wall. I believe this disastrous experience to be by no means un-

usual, and there can be no question that a large measure of ill-success is due to the tardiness with which surgical relief is afforded even at the present day. It is true that in cases which are brought to hospitals the delay has often already occurred before their admission: but how often has one seen hour after hour, and even day after day, passed under the old routine of a grain of solid opium every four hours, and enemata of all sizes and compositions, administered by variously elaborated mechanisms through a great variety of tubes. Although (or perhaps because) my own experience has been mainly medical, I have never yet had occasion to regret that the interference of the surgeon was too early resorted to; while the clinical and post-mortem room records which point in the opposite direction leave behind them a mental state much more dubious and uncomfortable. Until the doctrine of surgical interference at the earliest possible moment is definitely established, and recognised as one of the canons of surgery, it seems desirable that every case should be put on record, and the conditions which therein determined success or failure as clearly as may be defined. In the following case the operation was little more serious than an ordinary herniotomy, and there seemed no occasion for real anxiety after the first twenty-four hours.

Thomas T——, aged fifty-five, a labourer, was admitted to the Crewkerne Hospital at 10 P.M. on Sept. 1st, 1890. He was in his ordinary robust health until August 29th, when his bowels were slightly and naturally moved in the morning. At 3 P.M. on that day, while mowing barley, he was suddenly seized with severe pain in the abdomen, about the region of the umbilicus, and with vomiting. He has vomited at frequent intervals each day since, the vomit latterly being dark. The pain has persisted in the same region, colicky and spasmodic. The bowels have not acted since the morning of Aug. 29th, nor has he passed any flatus. He has taken castor oil three times, which he has vomited.—Sept. 1st: At 9 P.M. he had an enema of soap-and-water, which brought away one or two small scybala; a second was quite ineffectual; three pints of liquid were injected without difficulty into the bowel. He has had a right-sided bubonocele for some months, which disappears when he lies down, and has given him no trouble; it is back now, but comes down on coughing, immediately receding again. He lies on his back or left side, with his knees drawn up slightly. Constantly moans with the pain. Tongue moist, with a dirty brownish fur. The abdomen is a little distended, outline convex, not markedly tender. The peristaltic action of the intestines now and then visible. Nothing amiss to be felt either through the abdominal walls or per rectum. Temperature 98°; pulse 72. One-third of a grain of morphia injected subcutaneously.—2nd: Temperature 98·4°; pulse 76. Slept after the injection, and had a more comfortable night than hitherto. Pain recurred this morning, and he has vomited twice. The vomit dark and malodorous, hardly feculent. Bowels not open and no passage of flatus. Has passed no urine since admission. Very little since Aug. 29th, and that high-coloured. Has taken about six ounces of milk and a little tea. 1 P.M.: Still vomits. The vomit stercoraceous, like thick pea-soup. Had an enema with two ounces of turpentine, which returned unchanged. At 4 P.M. a consultation was held with Messrs. Alford and Webber, and with their assistance I opened the abdomen (the patient being under chloroform) by a median incision 3½ in. long. The small intestine was seen to be in one part distended and dark; in another empty. Tracing up the empty coils for a few feet, I came quickly to a strangulation. A firm, tough cord, about one-eighth of an inch in diameter, was attached to the inner aspect of the umbilicus, and passed thence downwards and backwards; its deep attachment was not determined. This band lay over the small intestine, tightly strangulating it against the posterior abdominal wall. It was divided on a flat director, when the intestine immediately sprang up, a deep indentation being left on its anterior aspect where the cord had constricted it. The bowel was hereabouts of a dark maroon colour, and the surface slightly granular. The peritoneum contained a considerable quantity of dark blood-stained serum. This was washed out with a gallon or two of hot water poured from a large jug, and the wound closed in the ordinary way with interrupted sutures of chromic gut. It was dressed with protective, a layer or two of wet gauze, and a pad of sublimated wood-wool, supported by strips of adhesive plaster. He bore the operation very well, and when put back to bed his pulse was 84. 8.30 P.M.: Temperature 98°; pulse 84. Complains much of the tightly applied dressings. Nothing has been passed. Vomited twice on coming round from the anæsthetic. Vomited matters as before operation. Took a grain of opium at 7 P.M., to be repeated every four hours. A little ice to suck. An occasional teaspoonful of hot water or tea.—3rd (10 A.M.): Temperature 98·4°; pulse 88. Had a little hiccough last evening from 10 to 11 P.M. Slept a little in the night, not more than ten minutes together. Has not vomited again. No passage of flatus, fæces, or urine. A little intestinal rumbling about 2 A.M. Feels tight and uncomfortable, as though wanting to pass urine. On attempting to pass a catheter a stricture, which gave trouble at the time of the operation, was found temporarily impermeable; the attempt caused some bleeding. To have a little milk and soda-water in addition to previous supplies. 8 P.M.: Temperature 98·6°; pulse 84. Looks brighter and feels much easier; has no pain. Passed two pints and a half of high-coloured blood-stained urine; also passed some flatus; no vomiting.—4th: Temperature 98°; pulse 80. Not much sleep; no pain. Passed flatus freely and urine; no vomiting. 9 P.M.: Temperature 98·4°; pulse 80. Complains much of thirst and is very troublesome and discontented in consequence. Had two half-pints of tepid water injected into the rectum, the second of which returned, stained with fæces, and with a strong feculent odour. To have the opium every eighth hour.—5th: Temperature 98°; pulse 68. As his thirst was so great he was allowed in the night more fluids, and took a pint of milk-and-soda-water (1 to 2) and two pints of toast water. Is much more comfortable in consequence and more amenable. Opium pill to be omitted. On the 6th and 7th he was doing well; flatus passed freely; bowels not open; took cornflour, ground rice, &c.—8th: Very restless last night and disarranged his dressings. Hence the wound was dressed this morning; it has united and looks well. The gauze and wood-wool dressing were applied as before. 8 P.M.: Had an injection of a pint and a half of tepid water. This was followed by two very copious solid motions. From this date convalescence was rapid and uninterrupted. The wound was dressed for the second time on the sixteenth day (Sept. 17th), when it was quite firmly united. The remains of the stitches then came away, and two days later he got up, the abdomen being still supported with a pad of wool and strapping. The nature of the constricting cord in this case was not determined, but its appearance and attachment to the umbilicus suggested that it was formed by the remains of the vitelline duct; if such was the case, the lumen was obliterated.

Crewkerne.

POISONING WITH AMMONIA; TRACHEOTOMY.

BY J. C. H. DICKINSON, M.B. CANTAB.,
LATE HOUSE SURGEON TO THE POPLAR HOSPITAL FOR ACCIDENTS, ETC.

THE following case presents several points of interest, which are, I think, worthy of publication.

W. T——, aged thirty-two, a publican, had been subject to attacks of delirium tremens at intervals for some years. During one of these attacks, on June 1st, he became melancholic, and swallowed a mixture of turpentine, strong ammonia, and olive oil, which he had obtained from a chemist to use as a liniment for his back. I was called in about an hour after he had taken a considerable quantity of this mixture. I found him with a flushed face, congested conjunctivæ, and a terrified aspect. The tongue was swollen and denuded of epithelium. A view of the soft palate and surrounding parts was much obscured by the swelling of the tongue. I administered an emetic of warm water and mustard; a considerable quantity of fluid, stained with blood and smelling strongly of ammonia, was brought up. In about half an hour's time he began to suffer from dyspnœa, and I called in Mr. Hamblin of Tredegar-road. The dyspnœa grew worse, and came on in paroxysms, following quiescent respiratory periods. During these attacks his face became cyanosed; he threw back his head, his breathing became loud and whistling, and he clutched the chair on which he was sitting for the purpose of using the extraordinary muscles of respiration. After witnessing some of these attacks, which became more frequent and prolonged, we

came to the conclusion that an operation was necessary if his life was to be saved.

Having obtained the consent of the relatives, the patient was placed in bed in a recumbent position, the shirt round his neck thrown open, and my colleague proceeded to administer chloroform. The patient had taken a few whiffs of chloroform when the respiration ceased entirely, and he became black in the face. I immediately made a vertical cut about three-quarters of an inch long from the cricoid downwards, cut down through a considerable layer of fat on the trachea, opened the latter just below the cricoid, and inserted a medium-sized tracheotomy tube, guiding it with a trocar fitting the tube. A quantity of air rushed out through the tube, but the patient made no signs of respiration. Artificial respiration was at once commenced, and after a few minutes' exertion I had the satisfaction of seeing the patient breathe naturally. There was very little bleeding during the operation, which took about thirty seconds. A steam tent was improvised and a damp sponge placed over the tube.—June 2nd: Patient passed a restless night and would not submit to the steaming. He took ten grains of chloral hydrate and twenty grains of bromide of potassium twice during the night; has been able to swallow small quantities of fluid nourishment, but has not been able to blow air through the mouth, the flame of a candle being quite unmoved when an attempt is made to extinguish it by blowing through mouth.—3rd: Has passed another restless night; has delusions of being watched and plotted against, also visual hallucinations of the usual kind, though he has kept in bed; tongue smaller in size. Patient insists on having tube removed; this was done in the evening, and a considerable quantity of blood-stained mucus was ejected through the wound. Has been taking two drachms of bromide of potassium and forty grains of chloral hydrate every twenty-four hours since the operation; diet, beef-tea, egg-and-milk *ad libitum*. Some pain complained of after food. A black loose stool passed. Urine dark in colour, but gives no reaction with guaiacum and ozonic ether, or with nitric acid; no vomiting.—4th: Breathing still entirely through the wound, though when the latter is obstructed he can expire through the mouth. Cough and expectoration worse. Rhonchi and râles heard at both bases of the lungs; still has pain after food; no motion passed; some surgical emphysema observed round the neck. Patient would not submit to the reintroduction of the tube. An expectorant mixture given: squills, senega, and carbonate of ammonia.—5th: Still very restless and excitable; the emphysema has spread down the front of the chest into both axillæ and round to the back of his neck; cough and expectoration increased; stools still dark in colour. Temperature 101°; respiration 28; pulse 120.—6th: Breathing more apparent through mouth, considerable discharge of mucus from wound. Emphysema not so marked; crepitations still audible at both bases of the lungs. Patient still restless, and haunted by delusions.—7th: Obtained some sleep after twenty grains of chloral hydrate. Considerable improvement in all symptoms. From this date he continued to improve. The emphysema and bronchitis both disappeared, and the wound closed at the end of a fortnight. His mental condition, however, grew gradually worse, and his delusions became more marked. He was sent to Brighton in charge of an attendant, and I have heard no more of him. The emphysema was, I think, undoubtedly caused by the premature removal of the tube; and the case is interesting in that it tends to show that emphysema adds but little to the gravity of such a case, the patient, except for a feeling of fulness about the neck, making no complaint, and breathing as easily as when the operation was first done. The melæna and pain after food showed that considerable damage had been done to some part of the digestive tract; and considering the condition of the patient, the wound healed remarkably well, with few signs of inflammatory disturbance.

Bow-road, E.

LONDON VOLUNTEER MEDICAL STAFF CORPS.—Four companies of this corps mustered last week in the Guildhall to compete for the challenge shield of the corps, which is held for a year by the company coming out first in a drill and bandaging competition. Surgeon Dorman, of the Army Medical Department, was the judge. At the close of the contest Surgeon Dorman announced that the best results had been attained by No. 4 Company, under Surgeon-major Watson, and composed chiefly of laymen drawn from the Birkbeck and Polytechnic Institutes.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

UNIVERSITY COLLEGE HOSPITAL.

A CASE OF CARIES OF THE LOWER DORSAL SPINE, IN WHICH DEATH FOLLOWED THE RUPTURE OF A PSOAS ABSCESS INTO THE RIGHT PLEURAL CAVITY; NECROPSY; REMARKS.

(Under the care of Mr. CHRISTOPHER HEATH.)

THE opening of a spinal abscess into the pleura is an event of great rarity; in fact, some surgeons teach that the abscess produced by caries of the spine never extends into the pleura. There are cases on record[1] of a fatal pleurisy produced by the extension of inflammation from the wall of an abscess; this inflammation, however, may not be fatal, but of localised character, and produce adhesions which prevent the escape of pus into the pleura, which may be discharged through the lung. One writer[2] on Diseases of the Spine says, "In those cases in which I have seen pus make its way into the pleura, a very considerable attempt had already been made by nature to limit its effusion by the previous production of adhesion all round the thinning spot, but this had been inadequate." Another writer,[3] in enumerating the rarer forms taken by spinal abscess, does not mention the possible giving way of the sac into the pleura. For the notes of this case we are indebted to Mr. Raymond Johnson, surgical registrar.

Robert S——, aged seven years, was admitted on Jan. 7th, 1890. Four months previously he had fallen into an area, striking his back, which remained painful for a short time. About a fortnight before admission the child's mother noticed that "his back was growing out," and that he walked awkwardly. On examination, slight prominence of the eleventh dorsal spinous process was detected. The right iliac fossa was occupied by a fluctuating swelling, which extended downwards to Poupart's ligament, but not below it. The right loin was bulged by a swelling, between which and that in the iliac fossa a sense of fluctuation was obtained. There was no paresis of the lower extremities, and no exaggeration of the deep reflexes. The maximum temperature was 99·6°.

On Jan. 11th the abscess was aspirated in the loin. Four ounces of pus were withdrawn, and after washing out the cavity with boric acid lotion, three drachms of iodoform emulsion were injected. No elevation of temperature resulted until the 16th, when 101° F. was registered at 6 P.M.

On Jan. 25th, the abscess having refilled, the aspiration and injection were repeated. The temperature on the 27th rose to 104°, and remained elevated. It was therefore decided to drain the abscess, which was accordingly done on the 31st by an incision in the loin. A large drainage-tube was inserted, and a dressing of salicylic wool applied. The pus evacuated measured half a pint, and was quite sweet. The dressings were changed daily, and the discharge rapidly became very small in amount. The temperature varied irregularly between normal and 103·8°. On Feb. 1st and the following two days there was frequent vomiting after food. On Feb. 4th chloroform was administered, in order to replace the drainage-tube. The child was very drowsy, and at night the temperature was 103·8°. There was slight cough, and examination of the chest revealed impairment of resonance and weak breathing on the right side. Death occurred at 10.30 A.M. on Feb. 5th.

Necropsy.—There was extensive destruction of the bodies of the last two dorsal vertebræ, and the anterior surface of the tenth was superficially pitted. The disc between the eleventh and twelfth vertebræ was completely destroyed, and that above it in its posterior half. The remains of the body of the eleventh vertebra had sunk downwards, thus

[1] Trans. Path. Soc., 1878, p. 191.
[2] Holmes' System of Surgery, vol. ii., p. 415.
[3] Ashhurst: International Encyclopædia of Surgery, 1884, vol. iv., p. 932.

tilting backwards the spinous process. Beneath the posterior common ligament was a cheesy mass bulging it backwards, and distinctly narrowing the spinal canal. The cord appeared normal. A similar cheesy mass lay beneath the anterior common ligament. On the left side it extended outwards to the head of the twelfth rib, which was partially destroyed, but on the right it communicated with the psoas abscess. This had been freely drained by the opening in the loin. At its upper end it communicated with the pleura behind the internal arched ligament of the diaphragm by a rounded opening large enough to admit the tip of the little finger. The pleural cavity contained about two ounces of pus, and the collapsed lung was coated with a thin layer of inflammatory exudation, most abundant on its diaphragmatic surface. No tubercle could be detected in the lungs. The liver was fatty, and there was a caseous gland in the portal fissure. The other viscera were healthy.

Remarks by Mr. RAYMOND JOHNSON. — This case illustrates an exceedingly rare occurrence. It is interesting that no pulmonary symptoms developed until the day before death. The condition of the pleura, and of the opening by which the psoas abscess communicated with it, suggested that the rupture had taken place some time prior to this date. The question arises whether the tension in the abscess cavity following the injection of iodoform emulsion may not have been a factor in determining the event. In this treatment of chronic abscess a temporary distension of the abscess cavity by a serous effusion usually occurs, and if the skin be thinned at any spot this may give way and leakage occur. To prevent this, it may in some cases be advisable to repeat the aspiration, if the tension becomes excessive in the course of the few days following the injection. The specimen illustrated well the mechanism of compression of the cord in cases of caries of the spine. Beneath the posterior common ligament was a cheesy mass, which distinctly encroached upon the canal, although apparently not being sufficiently marked to interfere with the cord itself. Michaud first clearly showed that this was the true explanation of the compression in the large majority of cases, it being exceedingly rare for the canal to be contracted by the bony deformity, even in the most advanced cases.

TOTTENHAM HOSPITAL.

CASES OF SUPRA-PUBIC LITHOTOMY.

(Under the care of Dr. HOOPER MAY.)

IT was shown by the discussion at the Royal Medical and Chirurgical Society, which took place on the 25th ult., on a paper "On 114 Consecutive Cases of Operation for Calculus in the Bladder, &c.," read by Mr. J. H. Morgan, that the question as to which operation, the supra-pubic or lateral, should be performed in children, has not been settled. Some of the speakers were in favour of one method, some of the other when a cutting operation is required. We refer our readers to p. 1217, for a report of the meeting. With regard to lithotrity in boys, surgeons in India continue to accumulate evidence in its favour, and in the last communication by Surgeon-Major Keegan,[1] he concludes that lithotrity by Bigelow's method is an eminently successful operation in practised hands. The following cases, more especially Case 3, are interesting examples of the supra-pubic operation.

CASE 1.—A. C——, aged nine, was admitted on March 19th, 1888. His mother said he had been troubled with his urine all his life, micturition always having been painful.

On April 5th supra-pubic lithotomy was performed. The bladder having been washed out with boracic lotion, about six or eight ounces of the same solution were injected into it, and a piece of thin drainage-tube tied round the penis to retain it. An indiarubber air-bag was introduced into the rectum and inflated. The bladder then made a distinct tumour in the abdomen, the area of almost complete dulness extending about half-way between the pubes and umbilicus, but the viscus could be felt much higher still. The bladder being exposed, two silk ligatures were introduced through its muscular coat near the upper part of the exposed surface, one on each side of the middle line, and, being held up, an incision was made into the bladder between them. The walls were very thick. The opening being made large enough to admit the forefinger, the stone was easily felt and extracted with a small lithotomy forceps. It weighed fifty grains when dry. The wound in the bladder was then carefully stitched with carbolised silk, with about half a dozen points of suture; it was, however, not watertight, boracic lotion injected into the bladder escaping through it. The upper part of the wound in the abdominal wall was also stitched with carbolised silk, first the muscles and then the skin, the lower part being left open and a small piece of drainage-tube introduced. The wound was then dressed with iodoform and perchloride gauze, a layer of styptic being placed over all. The operation was somewhat hindered by several attacks of vomiting, by which, on two or three occasions, the fold of peritoneum was forced down, but except at these times it was not seen at all. The space uncovered by peritoneum was large, extending considerably above the incision in the bladder. Six hours after the operation a catheter was passed, the urine drawn off being slightly blood stained.

April 6th.—Passed urine of his own accord at 10 P.M. easily, and again with straining at 4 P.M. on the 7th. With these exceptions, a catheter was used every six hours till the 8th, when he began to pass urine regularly, and continued to do so afterwards. On the 6th (the day after the operation) there was a slight rise of temperature to 100·2°, which was the highest degree throughout. The wound healed rapidly, with very little leakage of urine, only just enough escaping to moisten the gauze. A small fistulous opening, not communicating with the bladder, remained for a time, the wound being soundly healed on May 5th.

CASE 2.—C. K——, aged eight, was admitted May 1st, 1890. From three to four years ago it was noticed that the patient began to pass urine very frequently in small quantity, with pain and difficulty. After a short time these symptoms became more marked, and during micturition he assumed curious attitudes. On passing a sound a stone was felt in the bladder. On May 8th an operation was performed. This was conducted as in the previous case, the stone being removed without difficulty. The wound in the bladder was carefully sutured with carbolised silk, and the muscles having been brought together with catgut, the external wound was almost closed with silk sutures, a small drainage-tube being left in the lower end. The wound was dressed with iodoform, perchloride gauze, and a wood wool pad. The stone weighed 150 grains.

May 9th.—Patient passed urine at 9.30 last night; it was drawn off by catheter at 11 and contained much blood, also at 4.30, and again at 10 this morning. On the last occasion it was quite clear. A fresh dressing was required last night.

10th.—Wound dressed again, as he had soiled the dressing; also at 5 P.M. for the same reason.

13th.—Wound dressed; tube removed.

23rd.—Wound healed.

CASE 3.—S. R——, aged twenty-four, a domestic servant, was admitted on June 2nd, 1890. About two years ago she had "discharge" in urine after it settled; no symptoms before, and she remained free from them for about a year, after which she had occasional sudden stoppage during micturition. A catheter could not be passed; it impinged on something hard which gave a metallic sound; per vaginam an ovoid body could be felt, apparently in the bladder.

On June 5th an operation under chloroform was performed. The stone was clearly felt bimanually to be of large size. As a catheter could not be introduced, the bladder was not distended, but was raised by a bag introduced into the rectum, and filled with air. In exposing the bladder, which was flaccid, pale in colour, and thin, the peritoneum was wounded, and immediately closed with catgut sutures. Silk loops were introduced into the exposed surface of the bladder, one on each side of the middle line, and between them an incision was made into the bladder. A large calculus was then felt. This seemed to fill the whole bladder, and the incision was extended. Forceps were introduced, and the stone seized with some difficulty, although it was pressed up by the finger of an assistant. It was so firmly adherent to the bladder that the latter had to be literally peeled off it by means of a director. When it had been thus freed all round the further extraction presented no difficulty. A large drainage-tube was introduced and left in the bladder, which was not sutured. The wound in the abdominal parietes was left open with the exception of two sutures at the upper part. The calculus weighed four ounces and ninety grains.

June 6th.—Morning temperature 100°. Has complained

[1] THE LANCET, vol. ii. 1890, p. 719

of slight pain in the left iliac region; the urine had soaked freely into the dressings; it was acid, and contained less albumen than when previously tested; slight tenderness just round the wound; no general tenderness. Evening temperature 100·4°.

7th.—Urine passed freely; a large catheter introduced this morning, and the bladder syringed through it with boracic lotion; slight tenderness complained of in both iliac regions on pressure; no pain over the abdomen; pulse rapid, soft, fuller than before; has been sweating, but has had no rigor. Temperature at mid-day and at 6 P.M. 103°.

8th.—Temperature this morning 101°; bladder syringed twice daily as a quantity of shreds block the catheter, the latter drains away the great part of the urine, but the pads in front still absorb a quantity; patient feels much better; pulse improved; appetite good. Evening temperature 101°.

9th.—Temperature this morning 100·4°; patient feels much better; subsequent progress satisfactory.

CASE 4.—E. Y——, aged four, was admitted on June 16th, 1890. For over a month he has complained of great pain on micturition, and was noticed to pass urine in small quantities and very frequently. The act was performed in all positions, the patient screaming with pain, chiefly at the end of the penis. The urine is acid, sp. gr. 1019, a trace of albumen, and a few epithelial and pus cells. On June 19th a rectal bag was introduced and the bladder partially distended with boracic lotion, being too irritable to contain much fluid. The bladder lay at a great depth owing to a large amount of fat. The stone, which weighed ninety-eight grains, was easily extracted. The wound in the bladder was closed with three catgut sutures, the muscles and the skin being brought together in the same manner and a small drainage-tube left in the superficial wound. Urine was drawn off by the catheter some hours after operation.

June 20th.—Temperature 101·4°; wound dry; slight oozing of blood-stained fluid on the gauze dressing; urine clear.

24th.—Temperature 102°; has an eruption and other symptoms of measles.

30th.—A little urine and a good deal of pus escape from the wound. Soon after this the patient left the hospital well, but was readmitted on account of a superficial abscess in the cicatrix.

Remarks by Dr. HOOPER MAY.—In the first two cases the bladder, being healthy and uninjured, was carefully sutured, and healed rapidly. This was also done in Case 4. Suturing was not attempted in Case 3. In this case the bladder, having ceased to perform its function, had become atrophied, its walls being very thin and pale, showing a marked contrast to the condition seen in the other cases. When, as in this instance, the bladder from any cause cannot be distended, the operation is rendered more difficult. In the case of small stones the perfect suturing of the bladder may be facilitated by the incision in the wall of the bladder not being carried too close to the pubes. When this has to be done, the lowest part of the incision is apt to be carried out of reach, when the bladder contracts, and sinks down into the pelvis.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

Operation for Vesical Calculus.

AN ordinary meeting of this Society was held on Nov. 25th, the President, Mr. Timothy Holmes, in the chair.

Mr. JOHN H. MORGAN read a paper on 114 Consecutive Cases of Operation for Calculus in the Bladder performed at the Hospital for Sick Children, and compared the methods adopted. The paper was accompanied by a table giving the date and nature of the operation, the age and sex of the patient, the name of the operator, and the result, with such details as were to be found in the operation book. Of the 114 cases, seventy-five were subjected to lateral lithotomy, with four deaths. Lithotrity was performed in eleven cases (three females), with one death. In fifteen instances the supra-pubic operation was adopted, of which two ended fatally. Of the remainder, nine were cases of vesico-vaginal lithotomy, all recovering from the operation. In four patients the calculus was successfully removed from the urethra. The cause of death was given in each instance where it occurred, and the various casualties at or subsequently to the operation were enumerated. Some details were given with regard to calculi which were remarkable on account of size, composition, or other peculiarities, and the calculi were exhibited. The results and merits of the various operations were discussed, and the following propositions made from consideration of the facts given in detail: 1. That in the cases of boys and girls small stones should be dealt with by litholapaxy. 2. That stones composed of oxalate of lime or of such size as not to be readily grasped between the blades of a lithotrite should be removed by the lateral operation in the case of boys. 3. That the supra-pubic operation should be reserved for stones of very large size or inconvenient shape in boys or girls, or cases of calculus embedded in a saccule of the bladder or impacted in the mouth of a ureter.

Dr. MARSHALL wished to add to the list of the author his own record of lithotomies and litholapaxies in children. Since 1878 he had done twenty-seven lithotomies; twenty-six of these were lateral and one supra-pubic; the latter, which was done according to Annandale's method, died; while the twenty-six recovered. The average stay in the hospital had been thirty-two days. In three cases there was hæmorrhage after the operation; in two it was trivial, coming on within two or three days; in the other it came on at the end of the week, and caused some anxiety, but with the tying of a catheter in the urethra, and the plugging of the wound it did well. In only one case had he met with urinary fistula. A boy was to be cut by the lateral method for three large stones; he was not quite under the anæsthetic when the staff was passed, and he gave a lunge; it travelled out of the urethra, and made a false passage; the boy was therefore put back to bed unrelieved. In three weeks' time the staff was again passed, and was thought to be in the bladder; the lateral cut was made, and it was then found that the staff was really in the false passage; it was therefore withdrawn, the opening into the urethra found with a director, and the operation completed, and the wound healed in a fortnight. A month later, however, the wound broke down again, and a urinary fistula had persisted ever since. He had performed litholapaxy eleven times; in three the operation had to be abandoned for various reasons, and lithotomy was carried out instead. The average stay in the hospital had been three days and a half, and no accident had attended the cases. Four cases of impacted calculi he had dealt with by the wire snare. He had met with one case of extravasation of urine in a boy of two, which he had thought was due to impacted calculus. A large abscess formed in the left side of the scrotum, and when this was evacuated the calculus perhaps escaped by that route. No reference had been made in the paper to incontinence of urine after the operation. In his twenty-six cases he had met with four or five. It had got well at puberty, but it was an annoying complication. He had had only one case of stone in a female child; it died after an unsuccessful crushing. He confessed that he had at first approached the operation of litholapaxy with considerable hesitation, but he did not now regret that he had adopted it, and he thought that most of the calculi which were met with in children would be dealt with by that method in preference to any other. The choice of the operation should depend as much on the kind as on the size of the stone. He would formulate his rules of practice somewhat in the following way. For the great majority of calculi he would do litholapaxy; very large and very hard stones he would deal with in other ways. In stones of average size the method adopted would depend much on the operator. The supra-pubic operation would be reserved for very large calculi. He would take care to have a sufficient number of lithotrites at hand, and, in fact, a large range of all classes of instruments likely to be necessary. If the floor of the urethra were used as a fulcrum for the lithotrite, then a smaller instrument would have to be used at the second or third introduction.

Mr. BUCKSTON BROWNE asked why the cases only went back to 1864, when the hospital was founded in 1852. The number quoted gave an average of about four a year, which showed that the disease was comparatively rare. He thought that the term "litholapaxy" should be carefully distinguished from lithotrity, and he held that any stone requiring an operation for its removal should be counted as a stone in the bladder. He would put lateral lithotomy entirely aside in favour of the supra-pubic method, because

the latter was less dangerous; there was less risk of blood poisoning and less trouble from hæmorrhage. Then accidents happened in the performance of lateral lithotomy in children; the urethra had been ruptured, the sound had left the urethra and gone into a false passage, and more used to be heard of these accidents years ago. Until the finger really came into the bladder, one might be unaware of the existence of encysted stone or of a stone of unusual shape; this might necessitate supra-pubic cystotomy, which might thus have to be done after the lateral operation had been undertaken. Then it might be followed by fistula, which was, to say the least of it, a disgusting complication. He knew of two men who were now past middle age and married, without children, on whom lateral lithotomy had been performed in their boyhood; this might perhaps be due to some damage to the orifices of the ejaculatory ducts. Incontinence of urine he had known of after the removal of large stones and after plugging for hæmorrhage, and in one of these the trouble did not cease at puberty. All these points seemed to him to favour the supra-pubic method.

Mr. WALSHAM had performed lithotrity on seven or eight children aged between three and thirteen, the weight of the stone being from ten grains to nearly an ounce. It was a matter of great importance to have several lithotrites, as smaller instruments were required as the urethra swelled; the blades also should lock in the bladder, and the evacuating catheters should be fitted with a stylet so as to dislodge any fragment which might be present, and which in removing the instrument might tear the urethra. In the case of rupture of the bladder which had been quoted, he inquired if all the urine had been withdrawn, for it was easy to ascertain how much the bladder would hold without distension, and the amount delivered into it from the ball of the evacuator was easily regulated. He thought recurrence was rarer in boys than in adults; the bladder in them was smoother, there were no sacculi, the prostate was undeveloped, and the organ was therefore more easily emptied. All his cases had recovered, and the latter ones had been allowed to run about the ward on the second day after operation without harm resulting.

Sir JOSEPH FAYRER was grateful that the labours of his brother officers in India had been noticed. Their enormous experience was too little known and too little referred to in this country, though the statistics they had produced were readily available.

Mr. BARWELL deprecated the use of the vaginal operation of lithotomy in girls, and thought that if the stone could not be crushed it should be removed supra-pubically. The rectal bag was unnecessary, for it not only did not raise the bladder, but it threw the base of that viscus into a more awkward position.

Mr. J. HUTCHINSON, junr., commented on the absence of mention of incontinence of urine as a sequela. He had met with three cases following lithotomy, two being lateral and one a median operation. He asked what evidence there was that this incontinence disappeared at puberty, and he referred to a post-mortem examination recorded by Dr. Goodhart in the Pathological Society's Transactions in which the scar of a lateral lithotomy involved one of the vesiculæ seminales and the vas was cut completely across, though the testicle on that side was normal, as were also the muscles of the neck of the bladder. No one had alleged that incontinence followed lithotrity.

Mr. WARRINGTON HAWARD considered that the operation of lateral lithotomy gave extremely satisfactory results, for in this series there appeared to be only one death which was directly attributable to the operation; or, taking the whole four deaths, the mortality was only 1 in 17, whereas the litholapaxies gave 1 in 8. As to the distressing results which had been said to have followed the lateral procedure, nothing was heard of them in the author's paper. He himself had not seen incontinence of urine as a result, and accidents were not numerous. In cases of litholapaxy he had seen severe pain afterwards, and the distension of the bladder was not altogether harmless. Though recurrence did not appear to have been frequent, yet there was mention more than once of bits of stone having been passed, and, of course, if these had remained they might have formed nuclei for calculi. He could not see that the supra-pubic operation was easier; it was good only where the stone was very large, or where it was necessary to see it. The mortality amongst the supra-pubic cases seemed to be 1 in 7½.

The PRESIDENT said that in his younger days it was an accepted axiom that lateral lithotomy in children was the safest and most successful operation in surgery. He had seen one case where the stone was so large that the rectum had to be laid open in order to extract it, and the child afterwards suffered from an incurable fistula; but that was the only instance of fistula which he could remember, nor had he seen any cases of urinary incontinence, though they doubtless did occur after the removal of large stones. The mortality was small, and the proved bad sequelæ very few indeed. He could not speak as to the occurrence of impotence; he had seen a few cases where no such bad result had followed. He was not altogether sure whether the experience gained from Indian children could be applied to English cases. Our experience, both in lateral lithotomy and litholapaxy, had been large, but he protested against any confident assertion at present of the superiority of one over the other. He agreed that in the female child the supra-pubic operation was superior to operation through the vagina; but as to the general preference of the supra-pubic over the lateral method, he must say experience at present pointed to the conclusion that the supra-pubic was more dangerous than the lateral, and ought to be reserved for the exceptional cases which had been mentioned.

Mr. MORGAN, in reply, said that the book which furnished him with the material of the paper only extended back to 1864, the cases done by Mr. Pollock and by Mr. Atholl Johnson not being recorded in that volume. In his own experience he could not recall a single case of incontinence. He was disposed to speak with more trepidation of the supra-pubic method than did some of its advocates; it should certainly not be spoken of as easy or free from difficulty or danger. These were so considerable that they would trouble persons of slight experience. One reason why lithotrity had progressed so slowly was because of the difficulty in obtaining reliable instruments. There was very little danger of rupturing the bladder, and he thought it was an accident which would not happen again, the slightest force being sufficient to draw the fragments into the evacuating catheter. The danger of urinary fistula following lithotomy was another point in favour of crushing. He still held to his opinion that the supra-pubic operation should be avoided in children if possible. It was impossible to say whether injury to the vesiculæ had occurred. He agreed that the vaginal operation should not be performed in children. He had seen no pain after the operation except temporary trouble during the passage of a fragment. If the male blade were properly constructed difficulty in introducing the lithotrite would not happen.

The PRESIDENT announced that in future the ballot would be taken during the first half-hour of the meetings, instead of prior to them as heretofore.

CLINICAL SOCIETY OF LONDON.

Small Cervical Aneurysm.—Arrested Development of Metacarpal Bones.—Congenital Deformity of Mouth.—Bone in Urinary Bladder.—Hydronephrosis.—Lingual Dermoids.

A CLINICAL MEETING of this Society was held on Nov. 28th, the President, Mr. Christopher Heath, in the chair.

Dr. SIDNEY PHILLIPS brought forward a female patient aged thirty-seven, who presented a small Ovoid Swelling in connexion with the External Carotid Artery on the right side. There was a systolic bruit heard over the swelling, which appeared to be a small fusiform aneurysm. It was said to have originated in suppuration of the neck during an attack of scarlet fever at the age of six years. It was not possible to say whether this was so, but, as arteries were sometimes opened up by such suppuration, it was possible the wall might be weakened in other cases, and at a later date dilate into an aneurysm.

Mr. W. G. SPENCER exhibited a case of Arrested Development of the Third, Fourth, and Fifth Metacarpal Bones in both hands. The patient was a woman aged forty, and the bones affected were shorter by about ¾ in. than normal, whilst the first and second metacarpal bones were fully developed. It led to no result other than a diminished power of grip in both hands. He suggested that the arrest was caused by pressure applied to the fœtus during intra-uterine life.

Mr. ARBUTHNOT LANE showed a boy with an unusual Deformity of the Mouth. There was a double harelip, and the premaxilla was unduly prominent. The lower lip presented two fistulous openings at the muco-cutaneous junc-

tion, one on each side of the median raphe, and each of these was found to terminate in a flask-shaped cul-de-sac. From these glairy fluid exuded when food was taken.

Mr. BUCKSTON BROWNE brought forward a case in which several fragments of Bone were removed from the Male Urinary Bladder after disease of the spine had existed for seven years. He showed the pieces of bone, and related the history of the patient, from whom they had been removed by means of the lithotrite and lithotrity tube and aspirator. In 1880 the first symptoms of spinal disease showed themselves in the patient, then aged nineteen, a remarkably active man, and distinguished as an amateur athlete. In 1883 he consulted Mr. Barwell, who kindly furnished the following notes of the patient's condition while under his treatment. Much pain was complained of in the back, chiefly in the lumbar region. The spinous processes of the lower dorsal and upper lumbar vertebræ projected. There was no sign of abscess. The patient was out of health and anæmic. He complained of frequent micturition, which was attributed to irritation of the lumbar nerves by the edges of the foramina. The following year the back was improved, but the bladder was more troublesome. Later on in the year the spine was virtually well, but the urine had become cloudy and contained shreds of "mucus." Exploration of the bladder was proposed, but declined by the patient, as he had to leave the country with his regiment. When first seen by Mr Browne in October, 1887, the patient said that a year ago, after much pain in both groins, he had passed in his urine a wax-like solid body. He now complained of pain after micturition, the act was frequent, and after exercise he had passed a little blood; the urine was alkaline, full of pus, and contained much earthy phosphate, together with white, opaque, ragged flakes of lymph. On one or two occasions he had passed what he described as white stones or pieces of wax. On Oct. 26th ether was administered. Some irregular masses were crushed and washed out, which in the bladder appeared to be of triple phosphate. He was much relieved by the operation, and felt better than he had for years. The urine still continued to contain pus, and this persisted in spite of the most thorough and regular washing out of the bladder by various medicated solutions. Thinking that this pus was pyelitic in its origin, the bladder washings were discontinued. Next year another piece of so-called stone was passed; the urine became acid and almost entirely free from pus. The patient served with his regiment in Egypt, and all went well until January, 1890, when he began to experience his old trouble, pain at the end of passing urine, and on one occasion he had a severe attack of pain in the bladder and both groins. Pieces of so-called gravel were occasionally passed, and naturally always with pain. He had ridden to hounds without any inconvenience. The urine had again become turbid and flaky. On March 8th the bladder was again sounded, and what was thought to be a calculus detected. Next day, under ether, it was seized with a lithotrite; it did not crack, but yielded toughly to the pressure of the jaws of the instrument, and it was found impossible to withdraw the lithotrite until an effort had been made to disengage its jaws from what they had seized, and even then something tough and rough projected from the blades, which prevented their easy withdrawal, and caused some scratching of the urethral walls. Some débris was washed out with the usual lithotrity tube and aspirator, the lithotrite was reintroduced and brought out once more loaded with the unusual matter, and after again washing out the bladder was found to be completely evacuated. Upon examination the material removed was found to be the cancellous tissue of bone, and upon reference being made to the calculous matter removed in 1887, that also proved to be mainly composed of bone. The patient was last seen in April, 1890; the urine was clear, there was no irritation of the bladder, and he was able to ride and lead an active life. In conclusion, it was remarked that bone might obtain entrance into the bladder by mechanical violence, or by the slower processes of disease. Bone had been removed from that viscus after long-standing hip-joint disease, and ischio-rectal abscesses had been opened and fragments of bone discharged in cases where the abscess was due to Pott's disease of the spine. Dr. Walshe and others had published cases where pieces of bone had been coughed up from the lungs after spinal abscess, resulting from injury to the back. The late Mr. A. Shaw had related a case where a spinal abscess had discharged itself into the bladder, but the author was unaware that there was any case on record where bone from the spine had been discharged, or had required removal from the urinary bladder. He urged that when an operator had any reason to believe, when using a lithotrite in the bladder, that he had to do with bone or with a bony nucleus, he should proceed with great caution, for it was exceedingly easy for the lithotrite to become so engaged with a piece of bone that its jaws could not be disengaged, nor the bone, owing to its toughness, crushed, and then cystotomy would have to be performed under unfavourable conditions.—The PRESIDENT remarked that it was difficult to trace the course of the bone, and he wondered how it got into the bladder from the dorsal spine.—Mr. BENNETT had never met with bone in the bladder, but he referred to the case of a man aged thirty, who came complaining of pain in the rectum and irritability of the bladder. In the front of the rectum in the prostatic region he found a swelling, which he opened, and evacuated much foul discharge, together with a hard mass, which proved to be bone. The history was that he had been laid up with hip disease for a year, when he was fifteen.—Mr. BOWLBY had seen three cases in which there was bone in the bladder; two were associated with pelvic disease, while the third had had hip disease in childhood. A stone was crushed by Mr. Morrant Baker and evacuated with a washer. A second recurrence was treated likewise, and the fragments of both were found to contain bone. When it returned a third time lateral lithotomy was performed, and the stone removed consisted of phosphates and urates with a nucleus of bone. There was pus in the urine, and the boy died some time later of pyonephrosis. At the necropsy the acetabulum was found to be perforated, and a hard fibrous track led to the bladder. There was no doubt that along this the sequestrum had passed.—Mr. BUCKSTON BROWNE, in reply to Mr. Parker, said that the vertebræ affected were the eleventh and twelfth dorsal and the first lumbar. He could find no record of bone getting into the bladder from the spine. As to foreign bodies, he had found a pair of forci-pressure forceps in the bladder, which had found their way there from the peritoneum, where they had been left during an abdominal section some months before. He had also found in the bladder the silk ligature of an ovarian pedicle.

Dr. GOODHART narrated cases of Hydronephrosis cured by Natural Effort. The first case was a young man who had fallen into a hole and struck his right side. He passed blood the same night, and was sick, and on and off for five weeks he had pain and more or less discomfort in the right loin, and then for the first time a swelling was noticed in that region. He was admitted with a large swelling in the right hypochondrium, which pressed up the diaphragm, and distended him much in that region. His urine was natural, except that the quantity was persistently small, the range being from fourteen ounces to twenty-six. Thinking that there was a ruptured kidney, and the swelling was in connexion therewith, Mr. Lane was asked to aspirate it, and this he did, with the result that sixty-four ounces of high-coloured urinous fluid, containing altered blood pigment, sp. gr. 1012, albuminous to the extent of two grammes per litre, and a slight trace of urea, were removed. He was much relieved, but the cyst speedily refilled, and twelve days afterwards he was aspirated again, six pints of similar fluid being removed. He was now allowed to go for a month, when nearly another six pints were removed. During this time he had been subjected to as much counter-pressure as he could bear, with the idea of hindering the effusion of fluid, but with apparently little success. It now became a question what was to be done. There seemed no limit at this rate to the number of aspirations that might be necessary, and, after all, be no nearer to a cure; and, on the other hand, from the readiness with which the cyst had refilled, if it were laid open and drained, a permanent fistula would be likely to result, and in the end would necessitate the removal of the kidney. The patient was therefore advised to leave it alone, and the result has been that the cyst slowly diminished in size, and ultimately completely disappeared. He was now quite well, and he thought he was passing a natural quantity of urine. The other case was that of a boy of eight, who fell on his side, passed blood in his urine, and in whom a large cyst gradually formed in the right side of the abdomen. He was under the observation of Mr. Watson of Rochester,

who told the author that when first seen the child had an enormous cyst, and his abdomen was in consequence so large that his waistcoat could not be buttoned. Nothing was done in this case, and after a time it began to diminish, and when he saw the boy three months later, although he still had a large cyst in the right loin which extended across the median line, it was evidently flaccid, and the fluid therefore undergoing absorption. He heard from Mr. Watson, nine months later, that the boy was perfectly well. The cases were brought forward to raise the question of the proper treatment of hydronephrosis, a question that was still an open one, but one which the author thought was being resolved more and more by surgical measures. Hydronephrosis in former times was treated by tapping, and the cases ultimately disappeared from view. That they did not die might be concluded from the evidence of the post-mortem room; therefore it was to be supposed that many of them recovered by natural effort, and from various physiological considerations it would seem that repeated tappings or interferences of any kind was bad practice, unless pain or disturbance of the general health necessitated it.—Mr. CLEMENT LUCAS regarded both cases as instances of injury to the ureter, which had probably become blocked by clot, the fluid accumulating behind it. He doubted if the repeated aspirations had any effect on the course of the case. Hydronephrosis, when it underwent a natural cure, usually accomplished this by a total destruction of the renal secreting structure. He had never adopted drainage for this condition, and he never intended to. The proper course was first to aspirate for diagnosis, and in order to give a chance of cure, if the condition were caused by the dilated pelvis overlapping the ureter, and, if that failed, to do nephrectomy, which was a most successful operation in these cases.—Dr. HADDEN referred to a case of a young woman aged twenty-two, who was injured by a kick in the abdomen. A swelling was noticed shortly afterwards in the left renal region. She was under observation for six weeks, and neither albumen, pus, nor blood appeared in the urine. A consultation was held, and it was decided not to operate, and the patient was allowed to get up. Next day the tumour had disappeared, and there was a coincident increase in the urinary flow, and a small quantity of albumen was noticed.—Mr. BENNETT said that these traumatic effusions often disappeared after long intervals. He referred to two cases, in one of which the swelling vanished after eighteen months and in the other under a year. We should therefore be a little cautious in interfering too early. To prove that permanent fistula did not always result, he referred to the case of a boy who had a hydronephrosis, and the practitioner, thinking it was abscess, laid it open; it discharged for six weeks and then closed, the boy making a good recovery.—Mr. BARKER related the history of a case which he had published elsewhere of a child aged six, who was run over. A hydronephrosis formed, and this was aspirated, drained, and finally nephrectomy was done. The injury proved to be rupture of the ureter, and urine was effused round the kidney. If the ureter were torn across, nothing but permanent lumbar fistula could be expected to follow drainage. Perhaps in the case Mr. Bennett had referred to the cortex of the kidney had been torn.—Mr. PARKER was reminded of a case of hydronephrosis in which injury displaced a stone which blocked the ureter. The patient died of uræmia, and at the necropsy it was found that it was the only working kidney, the other being disorganised and full of stones.—Dr. GOODHART, in reply, said that the probability was in favour of his case being an instance of ruptured ureter, owing to the small quantity of urine passed. If the effusion had been into the cellular tissue, one would have thought that it would not have accumulated so rapidly. Though in many cases the kidney substance wasted and disappeared, yet he could not admit that the stretched renal tissue forming the wall of a hydronephrosis sac was functionless. And if this were so, it was an argument in favour of drainage as against excision.

Mr. BARKER then read a communication on two cases of Dermoid Cyst in connexion with the tongue—one central, the other lateral, both large. The author referred to his former paper in the Transactions, and offered this as a sequel to it. Allusion was made to the mode of origin of these tumours in both situations. The first case was operated on last summer by the author for a large lateral dermoid, which was easily diagnosed beforehand. The cyst was removed unbroken by a vertical incision under the chin, which healed by first intention. The cyst contained sebaceous material without hairs. Its microscopical characters were described. The second case was communicated to the author through the kindness of Dr. W. Gray of Bombay, who had operated on the patient, and presented the specimens and photographs shown to the author. It was probably a unique lingual dermoid as regarded size, and the secondary changes it had produced in the jaws. It was central, and protruded several inches from the mouth, as well as forcing down the chin and submental tissues; it contained forty ounces of soft sebaceous material. When this was evacuated the collapsed cyst was easily drawn out of the body of the tongue, the patient making an excellent recovery. Mr. JOHNSON referred to a case of Mr. Beck's, reported in the Pathological Society's Transactions, in which the wall was composed of fibrous tissue; it was lined with stratified epithelium, and possessed sebaceous glands, but no hair follicles.—The PRESIDENT, in one or two cases, had dealt with them from the mouth, and had had to divide the mylo-hyoid freely in order to get the cyst out; yet this, he thought, was preferable to leaving a scar.—Mr. BARKER, in reply, agreed that the majority could be enucleated through the mouth, but in the case under discussion he removed it by the neck, because the walls were thin and there was a risk of it bursting. These cysts varied in size from time to time, and, although no doubt congenital, they had hitherto only been discovered in adults.

MEDICAL SOCIETY OF LONDON.

Cretinism.—Cleft Palate.—Infantile Masturbation.—Sacral Tumour.—Hypertrophied Lower Limb.—Congenital Malformation of Hand.—Leucoplakia.—Ruptured Ureter.—Abdominal Pulsation.—Graves' Disease.—Pulselessness of Upper Limb.—Recurrent Paralysis of Third Nerve.

A CLINICAL MEETING of this Society was held on Nov. 24th, the President, Mr. K. Thornton, in the chair.

Dr. MONTAGU MURRAY showed three cases of Cretinism in a boy aged sixteen, a girl of six, and a baby of one year and a half. The boy showed no sign of puberty, and was sufficiently intelligent to run errands for his mother. The girl presented a mottling of the skin where the circulation was bad, and there was a development of fatty lumps along the course of some of the muscles. The temperature of the two younger was subnormal, while that of the boy was normal. Etiologically, nothing could be discovered, both the parents being healthy.

Dr. WALTER CARR showed a distinct, though not very marked, case of Sporadic Cretinism in a child four years and a half old. There was nothing of importance in the family history, though the mother had had a fright during pregnancy. The child was the eldest of the family, and was born and had lived near London. It was stunted in growth, unable to stand or walk, and was very deficient in intellect; it never spoke, and took little or no notice of its surroundings. It presented a dry skin with excess of subcutaneous tissue, a short neck, a large prominent abdomen, short, broad, thick hands and feet, dry stiff hair, a flat nose, and thick lips. Its temperature was normal, and the thyroid appeared completely absent. It had formerly been more intellectual.—Dr. HADDEN commented on the appearance, in one of Dr. Murray's cases, of fatty tumours following the contour of the muscles. He believed that it was a condition that had not been previously described. He wondered if, in the last case, the cretinism had arisen after birth.—Mr. EDMUND OWEN called attention to the fact that not only in the fourth child, but in the case of the three other children as well, there was complete absence of the thyroid gland. He attributed the general condition to this congenital defect, and alluded to that important series of vivisection experiments which had shown that if the thyroid gland were removed in young monkeys a cretinoid condition was developed. Myxœdema was represented in childhood by sporadic cretinism.—Mr. BLACK suggested that implantation of the thyroid of animals might be tried.

Mr. EDMUND OWEN introduced two boys, aged respectively seven and nine and a half years, on whom he had operated a few weeks previously for closure of Wide Clefts of the Hard and Soft Palates. In the case of the elder boy, the cleft had extended from the incisor teeth to the tip of the uvula; but in the younger one the hard palate had been involved only in the posterior two-thirds. He had operated in each case

with the boy's head hanging down over the end of the table, chloroform being administered by a Junker's inhaler. The chief feature of the operation was this, that after approximating the long lateral flaps of muco-periosteum he had completed the relief of the tension of the soft palate by adopting Billroth's plan[1] of detaching the lower part of the hamular process. By this means the course of the tensor palati was shortened, and that muscle, together with the palato-pharyngeus, was slackened. In the elder boy's cleft seven sutures of silver wire and four of horsehair had been employed. In each case the cleft of both hard and soft palate was found completely and soundly closed, the only part in which union had failed being the end of the uvula. Mr. Owen was not prepared to say as to how far the favourable results obtained were influenced by the adoption of Billroth's suggestion.—Mr. MORGAN noticed that the uvula was not united at all in one case, and not satisfactorily united in the other. Was this attributable to the method of operation?—Mr. OWEN replied that it was not beyond his experience to find the uvula give way even where the utmost care was taken to suture it.

Dr. BEEVOR showed a case of Masturbation in an infant aged eleven months. Since between four and five months of age it had been observed to rub its legs together and produce penile erection, and occasionally a glairy fluid exuded from the penis. At times the infant would take hold of the penis with its hands. Its mother's father had been paralysed after a fit, but otherwise there was no history of nervous disorder. The urine was faintly alkaline, with no albumen; it had been circumcised without effect, and sounding for stone had proved negative. Bromide of potassium and belladonna had been prescribed. In reply to Dr. Herringham, he said he had been unable to collect any of the fluid to see if spermatozoa were present.

Mr. JOHN H. MORGAN introduced a patient from the Hospital for Sick Children with a curious Tail-like Projection from the Skin in the centre of the sacral region. The child had also a small exostosis from the os calcis. The tail consisted of a small soft mass of natural skin projecting from the back for about three-quarters of an inch. It appeared to have no deep connexion, and the arches of the vertebræ beneath seemed to be normally united. The subcutaneous tissue around was slightly thickened, but there was no other evidence of abnormality. The same gentleman showed a second case of Congenital Tumour in a child. This consisted of a round soft mass the size of a walnut, attached to the coccyx to the left of the middle line, and lying between the buttocks. There was no evidence of connexion with the spinal membranes.—Mr. BRUCE CLARKE referred to a somewhat similar case he had seen in his school days.—Mr. JAMES BLACK thought that the position of the larger tumour suggested teratoma.—Mr. MORGAN, in reply, expressed his intention of exploring, and then being guided by what he found.

Dr. HADDEN exhibited a boy aged six who had had for two years an Enlargement of the entire Left Lower Limb, due apparently to simple overgrowth of the subcutaneous fatty tissue. The limb presented no deformity, and the increase in size was uniform both in the thigh and leg.

Mr. JAMES BLACK showed a boy aged about four years, with a Congenital Malformation of the Left Hand. There was an entire absence of the index and middle fingers. Only the first phalanx of the ring finger was present, and a web connected this rudimentary digit to the little finger, the development of the latter being perfect. The thumb was also perfect in its development. There was no family history of congenital malformation, and none of maternal fright. Mr. Black proposed to operate by making palmar and dorsal flaps, in releasing the webbed digits, so as to avoid cicatricial edges being opposite and likely to reunite.

Mr. SHEILD showed a case of Leucoplakia of the Tongue in a man aged seventy-three, where he had removed the right half of the organ for undoubted epithelioma in December, 1888. An unhealthy condition of the tongue had existed for twenty years. There was no evidence of syphilis, but the patient was an inveterate smoker of strong tobacco and clay pipes, and to this habit he attributed his disease. The epithelioma had grown for nine months, and was of the size of a large hazel-nut, hard, warty, bleeding, and extremely painful. There was no glandular implication. He advised removal of the entire tongue, but to this the patient would not consent. The greatest local and constitutional improvement followed the operation. The patient had been since lost sight of. At the present time his condition was as follows. There was no sign of recurrence, and the glands were not affected. The remaining half of the tongue was indurated and fissured, and the epithelium corneous and collected into white leather-like patches. The case was brought forward to show the value of operation in cases of epithelioma of local origin. A large number of these cases of leucoplakia terminated in epithelioma, and it was especially in such that the "pre-cancerous" condition could be recognised. A free removal of the tongue before the glands were affected was a most important measure and might prove curative. In the present case removal of the other half of the tongue was strongly indicated. He asked what microscopical signs were of value in indicating cancer of the tongue. Cell-nests were certainly not pathognomonic.—The PRESIDENT asked how far it was justifiable to cut out pieces for diagnostic purposes. He thought he had seen a rapid spread of the disease take place in consequence of such diagnostic slicings. In any case where this was done one ought to be ready to proceed at once to immediate extirpation, if that were necessary.—Mr. OWEN quoted a case where a distinguished microscopist was wrong in his opinion, and a case presumed to be cancer turned out to be gumma.—Mr. STEPHEN PAGET had found "nests" in adenoma of the palate and tongue.—Mr. BALLANCE had seen typical carcinomatous structure in such adenomata. The presence of ingrowing columns of cells was far more important diagnostically than the "cell-nests."

Mr. H. ALLINGHAM showed a patient on whom he had operated for Rupture of the Ureter. A blow from a barrow-handle had been received on the left side of the abdomen, and the patient on admission to the hospital was in a state of collapse. Three days after admission the abdomen was explored, and a large sausage-shaped swelling found in the region of the ureter, which was thin and tense. He tapped this from the loin, and a pint and a half of turbid fluid was withdrawn. Drainage was maintained for a fortnight, and then the wound healed. Before the operation the amount of urine had diminished, whereas afterwards it increased in quantity.—The PRESIDENT did not regard the case as one of ruptured ureter, but rather as one of acute hydronephrosis from rupture of the renal pelvis. In one instance he had seen a tumour produced by a valvular condition of the ureter, and the patient made a good recovery after nephrectomy.—Mr. SHEILD inquired if blood were found in the urine. He had seen one or two cases of traumatic hydronephrosis.—Mr. BRUCE CLARKE thought that the rupture was higher up near the kidney, and that the swelling had pushed the peritoneum forwards.—Mr. ALLINGHAM replied that there was no bulging in the loin, no blood in the urine, and no distension of the pelvis of the kidney.

Dr. GILBART SMITH brought forward the case of a blacksmith aged twenty-seven, who, thirteen years ago, was seized with a severe attack of vomiting and gastric pain after food; he did not, however, have any symptoms like those premonitory of gastric ulcer. For five years he remained free from symptoms, and then eight years ago similar attacks again commenced, lasting from three to seventeen weeks. He had lost flesh, and noticed that the attacks were more severe when he was following his work. He had never brought up blood, and there was no microscopical evidence in the vomit of gastric ulceration. In the abdomen there was very distinct pulsation, though this was now less marked than formerly. He did not believe that aneurysm was present, and he diagnosed simple neurotic vomiting. The treatment adopted had been washing out of the stomach, and it had been attended with benefit.—Dr. DE HAVILLAND HALL referred to a case which had been diagnosed as abdominal aneurysm, but which turned out to be simple pulsation of the aorta. The stomach symptoms in these cases should be treated with considerate neglect.—Dr. BEEVOR suggested that the cause might be locomotor ataxy, the only signs present in some cases being periodical pains, vomiting, loss of knee-jerk, and Argyll-Robertson pupils.—Mr. SHEILD asked if a bruit heard over the spine posteriorly was not pathognomonic of abdominal aneurysm.—Dr. LITTLE had seen pulsation disappear in such cases under an anæsthetic.—Mr. KEETLEY insisted on the importance of early diagnosis. Some cases of abdominal aneurysm might be cured by the application of intra-abdominal pressure applied by an instrument passed through the foramen of Winslow, a small opening in the abdominal wall being made like that for cholecystotomy.—Dr. A. H. JONES of Northampton referred to a case which appeared to him to be parallel to that under discussion.—Dr.

[1] Centralbt. für Chirurg., March 29th, 1890.

GILBART SMITH replied that there was no element of ataxy in the case. In abdominal aneurysm the bruit might be faint, and might not be heard behind. In a recent case he remained in doubt even after an examination under an anæsthetic, and he was not in favour of treatment by any operation which involved opening of the peritoneum.

Dr. SANSOM showed a case of Graves' Disease, with Pronounced Retraction of the Upper Eyelids (Stellwag's sign). There was no descent of the upper eyelid with the downward movements of the globe (well-marked von Graefe's sign). Patient was a female aged twenty-four. The concurrent signs were: palpitation; pulse-rate usually about 100; thyroid enlargement (slight, chiefly left lobe); tremors (especially arms); restlessness; pigmentations of skin (chiefly face, folds of axillæ, groins, and popliteal regions); amenorrhœa. A soft systolic murmur was heard at the heart's apex and a venous hum in the neck. Anæmia not marked. The order of evolution was probably (1) periodic sweatings and flushings (several years); (2) palpitation (about three years and a half); (3) appearance of prominence of eyeballs, said to have been first noticed in the left eye (eight months). The exophthalmos was more apparent than real; very little prominence was noticed when the eyelids were closed. The interest of the case was chiefly in the question of the causation of Graves' disease. Why was there retraction of the upper eyelid? On this point evidence was wanted.—Dr. BEEVOR looked upon the retraction of the lid as due to muscular spasm.

Sir HUGH BEEVOR exhibited a case of Absence of Pulse in the Right Subclavian and the Arteries of the Upper Limb. The patient, a cabdriver forty-five years of age, formerly intemperate for eight years, had no history of illness, syphilis, or of anything the matter with the arm. Conditions of degeneration were indicated by arcus senilis, slight emphysema, and a trace of albumen in the urine. There was no thickening of arteries, or evidence of cardiac disease; pulse 96, well sustained, occasional intermittence. In the right arm the artery could be felt, but not the pulse. That arm had a girth just one-tenth less than its fellow; no difference of temperature to be noted. He has always been left-handed. In the right carotid there was slightly less pulsation than in the left. Was the condition congenital, or was it acquired by mediastinal growth, aneurysm, or obliterating endarteritis? Although the patient had had nothing the matter to his knowledge, and there was no impairment of the functions of the limb, he could find no record of such a condition as congenital. The only point of positive evidence in favour of its being acquired was that the radial artery could be just felt, but not the pulse; perhaps the tracheal breathing over the upper part of the sternum indicated a growth, aneurysmal or tumour. So large an artery was, he believed, very rarely known to be blocked by endarteritis. He inclined to the opinion that a small aneurysm pressed on the artery.—Dr. HADDEN referred to two cases of absence of pulse in the right upper limb shown at the Clinical Society, one by himself and one by Mr. Pearce Gould; and he had seen a third, which also involved the right upper limb; all were free from history of syphilis. In this case the age was greater than in those, degenerated vessels were present, there was a trace of albumen in the urine, and he thought that it was more like aneurysm than obliterative arteritis.—Dr. GILBART SMITH agreed that the cause was probably a tumour pressing centrally. He had seen two cases in which there was no abdominal aortic pulsation and no pulse in the lower limbs, but the circulation was carried on collaterally; one occurred in a patient aged forty, while the other was younger.

Dr. RIVERS showed a boy aged thirteen with Recurrent Paralysis of the Third Nerve every three months for the last eight years. The following was the sequence of symptoms: headache, vomiting, followed by signs of paralysis of the third nerve; the latter lasted about two months; then came improvement, which was not quite complete. There was a mitral presystolic murmur, but the boy was healthy otherwise.

Treatment of Intra-laryngeal Stenosis; Intubation.

AN ordinary meeting of this Society was held on Dec. 1st, the President, Mr. Knowsley Thornton in the chair.

Messrs. BERNARD PITTS and WILLIAM BROOK communicated a paper on the Treatment of Stenosis of the Larynx and Trachea following Tracheotomy, made some remarks on the present position of intubation, and showed three cases. The authors commenced by saying that the difficulty of breathing after tracheotomy was often due to want of confidence on the part of the patient, the passages being free; but in the cases they were bringing forward the obstruction was organic, and situated in the upper tracheal or lower laryngeal regions. Tracheotomy in young children was usually done high, and the tube rarely fitted the patient comfortably if the cricoid were divided. Though such a tube as Durham's, with a movable collar, was advisable, at Great Ormond-street a bivalve had been in most frequent use, and this frequently caused a pressure sore. The first patient, a boy aged three, was admitted into the hospital in 1886, and tracheotomy was performed; scarlet fever developed later, and the patient was obliged to wear a tube for a time. Twice later, after closure of the opening had been followed by dyspnœa, fresh tracheotomy became necessary. McEwen's catheters and intubation both proving unsatisfactory, thyrotomy was performed, and a rough cicatricial band was found stretching across the air tube from below the cords in front to the posterior tracheal wall behind. Much relief followed; but later again a fourth tracheotomy became necessary, and this being followed by intubation with O'Dwyer's tubes, the larynx had still remained patent, and the boy made a perfect recovery with good phonation. The second case was that of a boy aged nine, who was admitted with membrane on the palate &c., necessitating tracheotomy. Later, symptoms of stenosis developed calling for exploration, and this was followed by intubation, the tubes being kept in for short periods. The third case occurred in a boy aged three years and a quarter; tracheotomy was done for diphtheria, and much membrane removed. Later the air-tube was opened, and a dense collar of cicatricial tissue found, which was cleared away with scissors and forceps; then intubation was carried out every few days. The fourth case occurred in a boy aged nine, tracheotomy having been previously done. On exploration a web with its aperture to the right of the middle line was found extending from the cricoid to the back of the trachea; this was removed, and intubation afterwards carried out. Where stenosis of the larynx was found intubation should be resorted to, and if this failed to relieve, exploration should be done and the cicatricial tissue removed. Intubation should be again resorted to immediately after the operation, so as to prevent recontraction. In inserting the tubes in stricture cases a certain amount of force was necessary and safe, and when wearing it there should be no string if the tube was to be left in more than twelve hours. The extraction was the most difficult part of the procedure. It was unsuitable in the cases of foreign bodies, active ulceration, new growths, pressure from goitre, and post-pharyngeal abscess. It was indicated in scalds, in œdema of the larynx, in sudden spasm of the glottis, in cases where the trouble was likely to be short, and it was useful as a means of diagnosis between obstruction situated above, and the dyspnœa arising from a tumour pressing below. As to diphtheria, it had given some satisfactory results, though its trial for this affection in this country had not yet been sufficiently extensive. Statistics were then quoted showing the results at the Victoria Hospital for Children, St. Thomas's Hospital, and the Great Ormond-street Hospital. So far as diphtheria was concerned, the advantages appeared to him to be the following: that the friends were not so frightened as by the proposal of tracheotomy, that no anæsthetic was required, that it could usually be recommended earlier than tracheotomy, that there was the avoidance of a wound with its hæmorrhage and danger of infection, that the air was warmed and filtered, and that a skilled nurse could be dispensed with. The disadvantages were: that there was no complete rest to the larynx, that the membrane could not be cleared out so well by forceps, that the pressure of the tube might aggravate the mischief or produce ulceration, that the membrane might be pushed down in front of the tube, and that though if the tube were blocked it might be coughed out, yet if this did not happen a medical man must be there to save the child's life, for a skilled nurse was helpless.

Mr. SHEILD had seen two cases which resembled those which Mr. Pitts had described, in which the tube had to be retained for some months, for on its removal the dyspnœa placed the child's life in jeopardy. In both these cases, however, the patients made a perfect recovery without operation. This treatment of freely excising the cicatricial tissue and following it by intubation might be applicable to old syphilitic adults who wore tracheotomy tubes. But sudden dyspnœa was likely to arise when intubation tubes

were not handy, and cases such as those of impaction of food required laryngotomy rather than intubation.

Mr. BRUCE CLARKE referred to a case admitted under him in 1888 of a boy suffering from dyspnœa. Tracheotomy had altogether to be done three times, and after this the larynx was split and found full of granulation tissue. This was removed with a scoop, chloride of zinc was applied, and the trachea freed from the surrounding tissues; later intubation was done, and the child made a good recovery. He knew of two cases of scald in which intubation had given good results.

Dr. DONKIN referred to some of the results obtained at the Shadwell Hospital for Children. He could speak of six cases. In one the membrane had been pushed in front of the tube, and tracheotomy had to be done. In three cases the relief was as complete as that given by tracheotomy. The reintroduction of a tube was sometimes difficult; if it were coughed out, the next larger size should be introduced. Two of his patients died of syncope, and in future, if necessary, he would tie the patients down to prevent this. In two instances the membrane had extended to the smaller tubes. Two old tracheotomy cases had been intubated, and these were now both without either tracheotomy or intubation tubes. Intubation was easy to perform; it was free from danger; there was no shock. The parents' permission was readily obtained, and the after-treatment was easy. It should be resorted to at first whenever possible. Cases of acute membranous laryngitis with marked expiratory stridor needed tracheotomy rather than intubation.

Dr. VOELCKER was not so hopeful as to the advantage of intubation over tracheotomy for diphtheria. In the present year at Great Ormond-street Hospital, out of fifty cases of diphtheria eleven had been tracheotomised with three recoveries, whereas eleven had been intubated with only one recovery. In the intubation cases at the necropsy there was found a dense continuous sheet of membrane extending down to the smaller bronchi. It appeared to him that in the ordinary cases of tracheotomy the membrane was not so extensive.

Mr. STAVELEY referred to the cases at the Victoria Hospital for children. Sixteen cases had been intubated, with seven recoveries and nine deaths. He mentioned a case of lymphadenoma where, on tracheotomy being performed, the child suddenly ceased to breathe, but an immediate resort to intubation saved its life.

Mr. TURNEY said that eighteen months ago he intubated his first case, and he pushed a flap of membrane down in front of the tube; in his second case the child coughed the tube up; in the third a knot in the string caused an ulcer at the side of the epiglottis; in the fourth scarlet fever supervened on diphtheria, and there was much ulceration of the aryteno-epiglottic fold. He had seen two other cases since of ulceration produced by the string, which he had latterly abandoned. In one case excoriation of the mucous membrane of the trachea occurred in twenty-four hours. The tube should not be kept in for longer than forty-eight hours. If it were required for a longer time than this, tracheotomy should be done. The relief was perfect at first, but the membrane was not so readily coughed up as through a tracheotomy tube.

Mr. POWELL referred to a case where intubation gave immediate relief; the tube was removed in sixty hours, and in two hours it was reinserted. The patient died on the ninth day of broncho-pneumonia. In another case, that of a child aged two, intubation gave no relief, but on its removal a large cast of the trachea was coughed up. In a third case intubation failed to relieve, and tracheotomy had to be done at once.

Dr. STURGES spoke of the use of intubation in various conditions. In diphtheria it had not been very satisfactory, but in infants it certainly made death more endurable. In cases where the membrane was very extensive, it was impossible for intubation to be curative. Its great use was where one would not probably be able to use it owing to the apparatus not being at hand, in such cases as those of infantile laryngeal spasm.

Mr. PITTS, in reply, said that the object of his paper was to elicit further experience. There was sufficient evidence from two hospitals that intubation gave better results than tracheotomy. All the cases in which membrane had been pushed down were first cases, and might have been due to a faulty introduction of the tube.

Mr. BROOK exhibited some intubation instruments in which certain modifications suggested by him had been carried out.

Reviews and Notices of Books.

A Handbook of Diseases of the Nose and Naso-pharynx. By J. B. BALL, M.D. Lond., M.R.C.P. London: H. K. Lewis. 1890.

THIS little handbook appears to be a very fair compilation of the subjects embraced in its title, and, so far, will prove of great assistance to those who seek information in this direction. We could have wished that the author had more often brought his own experiences to bear upon his descriptions, as sometimes they fall short of being absolutely accurate. For instance, we doubt whether his description of the normal appearance of the inferior turbinated body, as seen in the post-rhinal mirror, is quite correct. We admit that when it is visible, it is "usually uneven or somewhat corrugated" (p. 39), but this is the invariable appearance of the hypertrophied body. In the normal smooth condition it is rarely visible. Then, again, in describing the post-nasal space, we cannot but think that the prominence given to the pharyngeal bursa, and the opening leading to it, is rather the consequence of the numerous discussions that have of late been devoted to this somewhat hypothetical structure than due to the author's own observations. His descriptions of the various methods of examination are generally accurate, but in digital exploration of the post-nasal space we do not see how the "palmar surface of the finger is to be swept across the posterior wall" (p. 42). He tells us, moreover, that "it is not necessary to place a gag between the teeth," there being "no risk of being actually bitten." The author's experience has been unusually fortunate; but we believe the slow examination of the beginner frequently results in severe retaliation on the part of the patient. Then, again, we feel compelled to assert that the painting of the naso-pharynx with a 10 per cent. solution of cocaine as recommended (p. 42) may in the case of children be attended with very serious consequences. Further (p. 52), he describes all the most formidable symptoms of cocaine intoxication, but says, "they need not occasion alarm." In our opinion the production of such symptoms evidences great carelessness on the part of the operator, while they ought to be met with the energetic application of antidotes. But the bulk of the book is fairly accurate, and may be accepted as a fair guide to diseases of the nose.

A Treatise on the Common Sole (Solea vulgaris), considered both as an Organism and as a Commodity. By J. T. CUNNINGHAM, M.A., F.R.S.E. Pp. 147. Published by the Marine Biological Association. Plymouth. 1890.

THIS excellent work, which should be in the hands not only of every naturalist, but of every lover of nature in the kingdom, gives an exhaustive account of the sole—one of the very best fish for the table that is to be obtained on our coasts. It is the outcome of instructions given to Mr. Cunningham by the Council of the Marine Biological Association, and in the preface it is stated that the investigations were carried out at the laboratory of the Association at Plymouth, and engaged his entire attention since November, 1888. The treatise is divided into four parts, headed respectively Taxonomical, Morphological, Bionomical, and Economical. Each section contains many points of interest. Mr. Cunningham recognises five species of sole as denizens of the waters, varying in depth from twenty to forty fathoms, surrounding the British Islands. These are the Solea vulgaris, or common sole; the Solea lascaris, French sole or sand sole; the Solea variegata, or the thickback; the Solea lutea; and the Solea grenii. The points of difference between these species are of course fully given. A section is devoted to the colour of the sole, in which some remarkable points are made out, and are illustrated by excellent chromo-lithographs

from the brush of Miss Annie Willis. In the living fish the markings consist of large dark blotches and small white spots on a yellowish-grey ground. These blotches and spots are arranged upon a tolerably regular pattern, but, owing to a change in the disposition of the pigment, the colour of the animal varies in an extraordinary degree in accordance with the colour of the substratum on which it rests. This is beautifully brought out in Miss Willis's drawings, one of which represents the animal as it appears when lying on coarse, bright-coloured gravel in a shallow porcelain dish full of sea water and exposed to daylight from a south window. Another shows the same animal when lying on washed coal in a deep wooden tub and shaded from the light. The contrast is remarkable. Other drawings show another specimen lying on a white porcelain vessel, and when dead. The sole seems to be pretty abundant on the South Coast, and is almost always taken by the trawlers. It feeds on worms, being guided to them apparently by the sense of smell. The sole is remarkably free from parasites, the only form noticed by Mr. Cunningham being the Phylonella soleæ; and they appear to have few enemies besides man, since Mr. Cunningham has never found one in the stomach of any fish except the angler. The conger has, however, been seen to attack a flounder in a tank. An excellent account is given of their development and growth, not only in a state of nature, but under artificial conditions. It will interest some of our readers to know that the value of the soles sold in England and Wales amounts to no less than £400,000 per annum. The drawings are most admirable, and altogether we welcome the work as a most satisfactory outcome of the money that has been invested by the Marine Biological Association in their beautiful laboratory at Plymouth.

The Mechanism of the Circulation through Organically Diseased Hearts. By HERBERT DAVIES, M.D., F.R.C.P. Edited by ARTHUR T. DAVIES, B.A., M.B., M.R.C.P. Pp. 64. London: H. K. Lewis. 1889.

IN this unpretentious little book some of the last writings of the late Dr. Herbert Davies, as the result of many years' careful study and matured thought, are collected by his son. The fundamental idea is the difficulty of explaining the almost unembarrassed manner in which the circulation is maintained in many cases of undoubted heart disease. Dr. Davies argues the question very closely and very logically. His great point appears to be that obstruction or regurgitation at any of the orifices is always met by an amount of dilatation and of hypertrophy sufficient to keep the balance of income and outgo equal on the two sides of the heart. As he expresses it, the two fundamental laws of the mechanism of the circulation in the healthy heart are "(1) Synchroneity of action; (2) Equality of effluxes." These ideas are applied to cases of valvular disease presenting no symptoms, and are made to give valuable support to the author's views. The book is distinctly interesting, even though the style is somewhat involved, and is made more so by faulty punctuation.

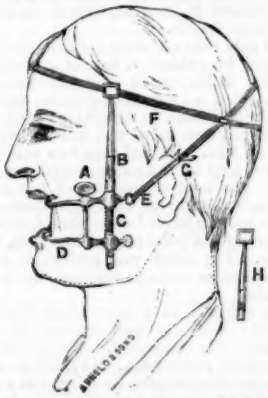
Selected Subjects in Connexion with the Surgery of Infancy and Childhood. By EDMUND OWEN, M.B., F.R.C.S. Pp. 99. London: Baillière, Tindall, and Cox. 1890.

THE Lettsomian Lectures delivered by Mr. Edmund Owen at the Medical Society in 1890 are here collected. They deal with a somewhat promiscuous set of topics. The author's headings are: Enlarged Lymphatic Glands, Sarcomatous Glands, Congenital Cystic Hygroma, Hare-lip, Coloboma of Eyelid, Dermoid Cysts, Sterno-mastoid Tumour, Vesical Calculus, Incontinence of Urine, and Ruptured Children. All these topics are dealt with in detail and with Mr. Owen's characteristic boldness of statement, and yet room is found for remarks on other subjects, such as vivisection and Frère Jacques. Still, in an entertaining fashion, Mr. Owen contrives to convey an accurate and life-like picture of modern surgical practice in a children's hospital. On the question of vesical calculus he has much to say which is entertaining and instructive, even though he deems it necessary to renew the debate upon "What is a stone in the bladder?" It should, however, be stated that in an appendix he reprints Sir Henry Thompson's letter on the subject, together with his rejoinder. The illustrations scattered through the text are of very unequal merit.

New Invention.

SELF-RETAINING SCREW GAG.

THE surgical gag has evoked a good deal of ingenuity on the part of operators, and though there are several in use which answer the purpose sufficiently, all, so far as I know, have what appear to me two main disadvantages. These are that they require a hand for the purpose of retaining them in position, and the teeth plates either do not grip sufficiently, or, if they do so, are fixed. I am aware that there are gags like the primordial cork, which are introduced into the mouth, but these are not now generally employed for prolonged operations; while Smith's gag, owing to the tongue plate, is inconvenient in post-nasal work. The obvious disadvantage of not having all hands available when these are scarce need not be dwelt upon, nor need one allude to the uselessness of a gag which does not grip the teeth, and there retain itself in position. To do this, however, safely, and that a gag so fixed should not play the part of the dentist's "key," it is necessary that the arm fixing the lower jaw should be movable and yet retentive of its hold, because the lateral movements of the lower jaw may occur inconveniently and powerfully in a restive or imperfectly anæsthetised patient. Having experienced all these inconveniences in throat operations, I have asked Messrs. Arnold and Sons, of West Smithfield, to construct a gag of the following description, which satisfies my requirements. Two arms, D, run upon a



screw, C, which is capable of being worked from either end by the key, B. The gag is thus applicable to either side of the head. The key, of which a separate illustration, H, is given, has a suitable mechanism for securing it to the end of the screw, thus enabling the whole apparatus to be retained in position by tapes, F and G, applied through the handle of the key, and finally secured through the ring, E. In order that a clinching of the jaws may not prevent the action of the screw, a smooth steel rod, A, is run through the levers, D, and relieves any such strain upon the screw. When, however, the gape is rendered sufficiently wide, the rod A is removed, and the lower lever becomes as mobile laterally as the jaw to which it is attached, and from which it is prevented from detaching itself by a well-made tooth rest. In the case of a willing and conscious patient there is, of course, no necessity for the rod A, as the mouth is willingly opened to the required extent, and the screw worked without hindrance.

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Green-lanes, N.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Proposed Extension of Clinical Instruction in Midwifery.

ON Thursday, November 27th, the Council resumed its sittings, and, after transacting the business reported in our last issue, proceeded to discuss the following motion of

Dr. GLOVER: "That it is urgently necessary for the examining bodies to require of candidates for their diploma additional guarantees of practical education in midwifery; and that candidates at the final examination be required to produce proof that they have personally attended at least thirty cases of midwifery, and been attached as pupils for three months to a lying-in hospital or a maternity institution, with arrangements for clinical teaching approved by the examining body granting the diploma." He reminded the Council that two years ago it had agreed that every student should attend three months at a lying-in hospital or attend twelve labours, three of which should be under the direct supervision of a registered practitioner. An amendment was moved to that motion by himself and seconded by Dr. Haughton (whose absence they all regretted to-day), "that the number twenty be substituted for twelve." Several of the bodies at that time required students to attend only six cases of labour. That number was raised two years ago to twelve, of which the teacher was not required to personally attend more than three. Upon the strength of this teaching the Council was content to turn out practitioners to the public. That was in itself an absurdity. Another absurdity of the previous recommendation was that the Council set twelve labours as an alternative against three months of in-door practice in the lying-in hospital. At present attention was being directed to Parliamentary proceedings with reference to the Midwives' Registration Bill. That had led him to look into the training of midwives, and from what he could gather from the Bodies which license midwives he found they were required to attend a lying-in hospital for three months and to attend twenty-five cases. He feared that they would have to admit that midwives were, in some respects, better educated in midwifery than medical students, and for the credit of the Council he wanted the resolution to be altered. There was no probability of a man learning very much from only twelve cases. What the student wanted was to see cases in their continuity—the accidents, emergencies, and complications of labour. He submitted that it was entirely impossible to obtain these things by simply complying with the demand of the Council. As the student devoted a great deal of time to clinical medicine and surgery, so he should devote a great deal of time to cases of midwifery. That could only be done by the Council enlarging its recommendations. He was glad to say that the Educational Committee had passed a resolution in support of his recommendation. No doubt the chairman of that committee would communicate that fact in due course. The next important point in the argument was the feasibility of making a larger demand upon the medical student, and he should like to show that as regards London at any rate the proposition was quite feasible. In the evidence given before the Lords' Committee on Hospitals, Dr. Steele, superintendent of Guy's Hospital, giving evidence, said that there were 3000 cases of midwifery each year within a radius of one mile of the hospital; that they sometimes had twelve cases in twenty-four hours, and often had difficulty in getting men to attend the cases. Sir Sydney Waterlow had informed him that at St. Bartholomew's Hospital they had nearly 1800 cases a year. In Queen Charlotte's Hospital there were 2174 cases a year. From the City of London Lying-in Hospital 1921 cases are reported. In the General Lying-in Hospital 1574. He did not know that the last two hospitals received medical students. He was therefore prepared to say that as regards London it was perfectly feasible to make the demand embodied in his proposal. He was pleased to hear Dr. Heath of Newcastle say that sufficient cases could be provided there. As regards Leeds or Liverpool and the other large provincial centres, there would be even less difficulty in providing cases. Coming to Ireland, Dr. Atthill would tell them how they were accustomed to meet the requirements of practical teaching in midwifery. In fact, midwifery teaching was one of the points in medical education in which the Council had a great lesson to learn from Ireland. The objection might be urged from the Scotch representatives that they could not supply that number of cases, but that could not certainly be tenable in such a town as Glasgow, and it was scarcely more credible that it could be so in Edinburgh. But if such were the case, it should not be allowed to weigh with the Council. He relied on the essential reasonableness of this proposition, and feared an unpleasant reminder of the difference between what was exacted of midwives merely and what was exacted of medical students. In regard to the great fear of midwives which agitated some of their medical brethren, he believed that the great security of the profession was the practical education of its members and the accentuation of the difference between a mere midwife and a fully qualified and well-trained medical man.

Mr. MITCHELL BANKS asked if the chairman of the Education Committee would be allowed to read the report of the Education Committee, which had been omitted from the agenda.

Dr. STRUTHERS apologised for the omission, and read the following motion: "That it be necessary that every student of medicine before being examined in midwifery should give proof to the licensing body before which he appears of having attended twenty-five cases of midwifery." That motion, he said, was carried by the Education Committee.

Mr. MITCHELL BANKS explained that on the previous day there were five members of the Education Committee present, and of these Dr. Bruce, Dr. Batty Tuke, and Mr. Wheelhouse, and himself were of one opinion as regards this recommendation. The chairman, however, did not agree with them. He ventured to say that in the medical profession there was a distinctly strong public opinion that a better and somewhat fuller training in practical midwifery would be useful and valuable. The Education Committee had endeavoured to put this matter in the simplest way. It had dissociated the question of actual obstetrics from gynæcology or diseases of women and children, conceiving that the Council had far better take up simply the one point. When the number twenty-five was selected Dr. Glover told them that the obstetric hospitals of London only granted this certificate to midwives upon the proof that they had attended twenty-five cases of labour, and he said it might be a difficult thing for the Council to say that medical students should have less practical acquaintance in this matter than a midwife, and therefore twenty-five seemed a reasonable number to the Education Committee. In saying this he did not offer any opinion of his own upon the subject.

Dr. LEISHMAN was sorry that he could not agree with Dr. Glover in the proposition, nor with many of the views on which he had based his conclusions. No man who had spent the best part of his life in teaching midwifery, both theoretically and practically, could fail to have a very deep feeling in the matter. He knew that of late there had been a strong demand on all hands for increased clinical instruction. It had always been regarded by him as impossible in midwifery to give the same amount of clinical instruction as that given in medicine and surgery, and he would hail with satisfaction any reasonable method set forth with the object of improving the clinical instruction on that subject in any way. While thoroughly approving of the object he disapproved of the method. If the question was one merely of figures, the matter would be simple enough. He had, however, always held that the true method of communicating instruction in midwifery was at the bedside, and he could say from experience that he would undertake to convey to a student more important clinical instruction in one single case than that student would in a haphazard fashion take up in thirty cases. The wording of their previous resolution he admitted to be faulty—nevertheless, nineteen members had voted for it and seven against, and it had been communicated to the schools. In Glasgow the first thing done was to make arrangements with the authorities of the maternity hospital. The resolution said three cases were to be attended under direct supervision of a very special kind, and that the whole twelve cases should be attended under the supervision of a registered practitioner.

He was rather astonished at the argument that because it had been determined by the Obstetrical Society of London, most wisely and properly, that twenty-five cases should be required for midmives, and that this was to be a requisite for the Bill which is under consideration, that attendance on twenty-five cases should be compulsory on medical students. He could understand how a member of Parliament, ignorant of these matters, might use it as an argument for votes; but he could not understand how a member of the medical profession could do so, for surely the education of a midwife was something very different from the education of a medical student. A midwife had to be taught what the ordinary monthly nurse was taught in a hospital to fit her to attend to the ordinary details of a sick room. The nurse could only gain that knowledge of minor details by attending a great many cases of midwifery. She was not to be entrusted with the sole charge of those cases. But that was a very different thing from the education of a gentleman who starts with a theoretical knowledge of the subject. It was for the Council to determine what the minimum number of cases was to be. He imagined that clinical training ought not to be founded upon a basis of numbers. The question had been under the consideration of several foreign countries. Dr. Leishman quoted from the report of Dr. Struthers, on "Medical Education as it exists on the Continent" (vol. xxv., page 27), and which dealt with the method in which instruction was conveyed in midwifery. In Berlin the number of cases the student must have attended was four, at two of these, at least, must a teacher, assistant, or a practitioner be present. In later cases the care of the patient was left to the student himself, the teacher having satisfied himself that the case was such a one as might be entrusted to the student with safety. In Vienna groups of four students had to attend the hospital during the night. Each of these in turn got a case assigned to him. He alone could examine and deliver, the other three watched the progress. Each of the students had really to deliver only one case in Paris. Attendance on a maternity was not yet obligatory. The students were free to study accouchements as they pleased. They were only required to answer questions at the examinations, where they were given pregnant women to examine. The requirements which the Council had sanctioned were at all events very far in advance of these. He did not want to lay undue force upon the argument that because there was abundance of material in connexion with certain schools, that ought to be applicable to all cases. He did not think it a fair argument. It had been considered by the Education Committee a few years ago, and the resolution submitted then was the result of balancing the various claims. Their report had been confirmed by a substantial majority. The Universities of Scotland took action necessarily of a cumbrous and tedious character. Two years afterwards they were now told that this was not sufficient. What security had the Universities that the matter had been threshed out at the Council? He felt it to be a matter of great importance, and he ventured with due delicacy to look at the question in view of the interests of the patients. Dr. Glover had said nothing on this subject. If a large number of midwifery cases were attended by large numbers of students, certain examinations were made which he need not refer to, except to say that the more examinations of that kind the greater was the danger to the woman.

Dr. ATTHILL, who seconded the motion, thought it a matter of deep regret, that medical authorities should make no attempt to improve the education of students in midwifery. It was not a century ago since obstetric physicians were sneered at as merely treating inferior beings. If he thought that by endeavouring to improve the education of students he was endangering the lives of women, nothing would induce him to say one word about it; but he assured Dr. Leishman that was a fallacy. He recounted the methods adopted in the Rotunda Hospital, Dublin, and supported his argument by quoting several cases of malpraxis which had come under his own notice. He regretted that the small concession proposed should have met with any opposition at all. He urged, for the reputation of the profession and on behalf of poor women, that the Council should grant this very moderate concession.

Sir WILLIAM TURNER contended that it was not the number of cases, but the conditions under which they were attended, that was important. According to the requirements of the motion or of the recommendation of the Education Committee, which required twenty-five cases to be attended by each student, he urged that in London alone, where 600 students enrolled annually, 15,000 cases would have to be found. Taking 1305 as the yearly average of practitioners enrolled on the Register, no less than 32,625 cases would have to be found throughout the country for the students alone. Computing the number of candidates remitted as one-third of the whole, 10,875 cases would require to be added on that account, making a total of 43,500 cases. He asked whether Dr. Glover was prepared to say if this number of gravid women could be guaranteed for the use of the medical student. Unless he could do so, his position was purely hypothetical.

Sir WALTER FOSTER thought Dr. Glover had been well advised in bringing this matter before the Council, because the existing regulations were not adequate to the importance of the subject. The fallacy in Dr. Leishman's speech consisted in arguing that a small number of cases well taught were of equivalent value to a larger number of cases well taught. He desired to see the teaching of this subject more thorough in its character. Sir Wm. Turner had assumed that the student would have to attend the cases by himself, but that was not so. By the exercise of a little judgment on the part of local teachers and local institutions, sufficient clinical material would be found to enable students to attend thirty cases, and so make the profession more respected in the eyes of the public.

Mr. WHEELHOUSE considered the question one of vast importance. The more cases a student attended the better qualified he became for his responsible duties. So far as the statistics submitted were concerned, fallacies ran through the whole of them. A number of men do not want all their midwifery cases in one year. As far as Leeds was concerned there was abundant material to give a student even fifty cases. He would vote for Dr. Glover's motion with great pleasure.

Dr. STRUTHERS was impressed with the belief that a smaller number well superintended was worth a great deal more than a large number loosely done. There was an *experientia vulgaris* and an *experientia erudita*. He wanted to know what was implied by the words "personally attended." Did it imply that the practitioner who was to certify these cases was to be present? Dr. Glover had seemed to omit that point. He thought the effect of the regulation would be to drive a large number of unqualified men into the country, where they could get no real education. It had been suggested that one case might do for a number of candidates. He ridiculed the idea of imagining that by going into a lying-in room in this way the student was gaining any real knowledge. He thought there were far more important things they should have security for than cases of midwifery. The arrangement was made very carefully in 1888, and he would support the continuing of the present rules.

The debate was adjourned until Friday.

FRIDAY, NOV. 28TH.

On the President resuming the chair on Friday, the adjourned debate on the "Improved Clinical Instruction in Midwifery" was continued.

Mr. MACNAMARA thought the question was a most important one. In the course of his career and as President of the Irish Medical Society he had been obliged repeatedly to take up so-called grievances on the part of practitioners in Ireland. Something like 99 per cent. originated out of some unfortunate circumstance connected with the practice of midwifery. He was thoroughly convinced that a sound knowledge of the obstetric art would be attended with great advantages to the public as well as to the practitioner. He would always vote against the handing over to persons over whom the Council had no earthly control the supervision of the education of medical students. The number of cases was of no moment, and it would be very hard to convince him that the general practitioner, deservedly enjoying the confidence of the public and entrusted with the care of their lives, could devote time to supervising a number of cases on behalf of a medical student. He strongly urged improved instruction in maternity hospitals.

Dr. BRUCE thought they were indebted to Dr. Glover for bringing forward this motion in order that the subject might be discussed, and, if possible, placed upon a more satisfactory footing. The subject required reconsideration,

as he could not say that many men put upon the Register were sufficiently trained. The only way out of the difficulty was, not by increasing the number of cases, but by putting the training in this subject on the same footing as that at present adopted in medicine and surgery. The difficulty would be met by compelling the student to attend at a maternity or lying-in hospital.

Dr. BATTY TUKE submitted that, by continually altering its recommendations, the Council would lose the confidence of the general public.

Mr. BRUDENELL CARTER was of opinion that external teaching was likely to be more effectual than teaching in a maternity, where the student was surrounded by appliances of all kinds, which he would not find in a general practice.

Dr. Atthill, Dr. Church, Dr. Leishman, and Dr. Heron Watson having continued the debate,

Dr. GLOVER, in reply, said he felt acutely the inaccurate and unjust remark of Professor Leishman that he had rushed into the subject without any consideration for the interests of lying-in women. He asked Dr. Watson if he could not imagine that a member of the Council might think fit to try to improve education in a matter which infinitely affected the future happiness and welfare both of medical men and of lying-in women. There was ample proof that nobody in the Council was satisfied with the resolution as it now stands. He challenged Dr. Leishman to say whether any student in Glasgow saw him personally at one single case so as to get the benefit of his valuable instruction.

Dr. LEISHMAN: Of course I could not by any possibility give a clinical demonstration to each student, but I take care that the student, so far as I have charge of him, does get clinical instruction of a very good kind.

Dr. GLOVER said he could understand Sir William Turner and Professor Struthers, who passed their lives in dissecting-rooms and museums, taking up the position they had done, but he could not understand why Dr. Leishman should try to mislead the Council by saying that in a single lesson he would convey all the information which a student required.

Professor LEISHMAN: What I said was that I would convey more information in one single case than the student could pick up for himself in ten.

Dr. GLOVER: I am trying to get a little more teaching for the student. I have never wished that he should pick up information for himself; I want him to have a prolonged education in cases in their continuity for a period of three months. He trusted the Council would see its way to accept his resolution.

Several amendments were proposed during the debate. On divisions being taken, the Council decided to allow their present resolutions to remain in force.

Dr. GLOVER gave notice that he would raise the question at the next session of the Council.

The Case of Thomas Hawkins.

The Council then proceeded to consider the case of Thomas Hawkins, registered in the Dentists' Register as in practice before July 22nd, 1878, who was summoned to appear before the Council on Friday, Nov. 28th, at 4 o'clock, on the following charge, as formulated by the Council's solicitor:—"That on the 25th day of June, 1889, he did fraudulently procure himself to be entered on the Dentists' Register as a duly qualified dentist in practice before July 22nd, 1878, he not having been in practice in accordance with the statement and declaration whereon he founded his claim to registration, and he not having any qualification."

The Dental Committee's report on this case shows that Thomas Hawkins, during the years from December, 1877, to December, 1881, was working as a carpenter and joiner, and in particular during the years 1877 and 1878, or one of them, was employed by the Audley Brick Company to do the joiner's work in a row of houses they were building at Church, near Accrington; and that during that time he resided at 2, Newark-street, Lower Audley, and further that in November, 1885, he entered the service of Mr. Nuttall of Bacup as a canvasser and collector, and continued there till October, 1888, and during that time never assisted in Mr. Nuttall's dental practice; and that David Holland had no apprentice while he lived at 71, Alexandra-road, which was from the autumn of 1878 to the year 1885.

On motion put from the chair, it was resolved:—"That the Council, having considered the facts of the case of Thomas Hawkins, as submitted by the Dental Committee, find that the entry of the name of Thomas Hawkins in the Dentists' Register has been incorrectly and fraudulently obtained, and they direct that the name and qualification of the said Thomas Hawkins be removed therefrom."

Registration of Qualified Practitioners.

On the motion of Dr. MACALISTER, seconded by Sir JOHN SIMON, it was agreed: "That all persons whose registration is in respect of any diploma or diplomas dated after June 30th, 1887, are persons legally qualified for the practice of medicine, surgery, and midwifery."

Sir WM. TURNER then moved, and Dr. HERON WATSON seconded, a motion: "That the Council instruct the registrars to insert the names and qualifications of Mr. R. C. Clarke, Dr. W. J. Branch, Mr. E. F. Hoernlé, and Mr. H. McCarthy on the Medical Register."

Royal College of Physicians of Ireland.

The Council agreed, on the motion of Dr. ATTHILL, seconded by Dr. MOORE: "That in all future issues of the Medical Register the qualifications of any Fellows, Members, Licentiates, and Diplomates of the College of Physicians of Ireland who make application to the Registrars appear under the designation of 'Royal College of Physicians of Ireland,' as authorised by Royal Charter, in place of King and Queen's College of Physicians in Ireland."

The Council then adjourned.

SATURDAY, NOV. 29TH.

The Council at this meeting had under consideration several matters of importance.

Report of the Pharmacopœia Committee.

The following report of the Pharmacopœia Committe was submitted to the Council:—

"The Committee have to report that a list of the thirty-seven proposed additions to the Pharmacopœia, recommended by the Committee and approved by the Council, was sent in accordance with the direction of the Council to the Pharmaceutical Society of Great Britain and also to the Pharmaceutical Society of Ireland, with a letter to each Society inviting their assistance in defining and preparing the several additions. The Committee have, in reply, received from the British Pharmaceutical Society a complete set of recommendations respecting every article of the proposed addendum, together with four subsidiary articles (namely, wool fat, Fehling's solution, gelatine, and the bark as well as leaf of witch hazel) rendered necessary for the production of certain of the thirty-seven primary additions. This Society has also forwarded a report of the proceedings of a special committee appointed by their council to deal with the proposed additions in the manner desired by the Medical Council. The committee recommends that the best thanks of the Medical Council be presented to the Council of the Pharmaceutical Society of Great Britain for the valuable assistance rendered. The committee view with satisfaction this conjunction of medical and pharmaceutical work in the production of the present extension of the Pharmacopœia, a combination that cannot but be productive of future, as well as immediate, benefit both to Medicine and to Pharmacy. To the annual reporter on the Pharmacopœia to the Medical Council, Professor Attfield, must be accorded the credit of initiating and organising this desirable union. The Committee recommends the further addition to the articles already approved in the Addendum of the following three substances:—Acetanilidum, phenacetinum, and pulvis sodæ tartaratæ effervescens, as well as the above-mentioned four subsidiary articles. The Committee submits to the Council a copy of the Addendum, ready for press as soon as it has been approved by the Council. The Committee recommends that 5000 copies of the Addendum be printed, and that the price of each copy be one shilling. The Committee cannot conclude their report on the completion of the Addendum to the Pharmacopœia without offering their testimony to the care, skill, and tact with which the editor of the work, Professor Attfield, F.R.S., has performed his manifold duties.

"November 25th, 1890." "RICHARD QUAIN, M.D., Chairman.

In moving the report Dr. QUAIN said that it was not necessary for him to say much on the subject. The report was now submitted to the Council for its confirmation and approval. They were very much indebted for the extreme readiness with which the Pharmacopœia Society acceded to the request of examining the work of the Council's Committee. They had taken immense pains in the matter.

Mr. BRUDENELL CARTER seconded the motion, and referred to the great labour, pains, and care which had been taken in the preparation of the Addendum by the chairman of the Committee. The President concurred in the expression of thanks to Dr. Quain.

Dr. LEISHMAN asked Dr. Quain whether attention had been given to the subject of certain experiments in connexion with salycine and the salycilates.

Dr. QUAIN said the fullest attention had been given to the subject, and that he held in his hand a communication from Dr. Lauder Brunton on behalf of the Pharmacopœia Committee of the British Medical Association, together

with the answer, which he was prepared to read, and which would be sent to the Committee.

On the motion of Dr. QUAIN, a vote of thanks was given to the Council and Pharmacopœia Committee of the Pharmaceutical Society of Great Britain for the very valuable assistance rendered by them in the preparation of the Addendum, 1890, to the British Pharmacopœia, 1885.

Petitions.

On the motion of Mr. CARTER, seconded by Sir WM. TURNER, it was resolved: "That any petition presented to the Council shall be referred to the Business Committee to be reported upon before it can be received; and that no petition shall be received which is found by the Business Committee to refer to more than a single main question."

Sir WILLIAM TURNER moved: "That the President be empowered to communicate with the medical authorities concerned in the granting of diplomas in Public Health, with a view to ascertain what courses of practical laboratory instruction they may have prescribed under Clause D of the Council's regulations for candidates in Public Health." He hoped as a result of this motion that the Education Committee would obtain definite information as to whether any of the medical authorities accepted as instruction for sanitary diplomas instruction given in physiological or chemical laboratories. It was of the utmost importance in connexion with the system of laboratory training for public health degrees that the instruction should be given in a laboratory specially set apart for methods and processes required by medical officers of health. No merely scientific investigation would meet the necessities of the case.

Dr. MACALISTER seconded the motion.

The Council adopted the motion, and arranged that the communications received by the President should be referred to the Education Committee for report.

The University of Aberdeen.

On the motion of Dr. STRUTHERS (Aberdeen), seconded by Mr. WHEELHOUSE, the Council extended their approval to the regulations of the University of Aberdeen for diplomas in Public Health. These regulations are in complete accord with the resolutions of the Council. In every respect, Dr. Struthers said, Aberdeen University had been loyal to the Council, and asked for no exemptions.

The Glasgow Public Health Diplomas.

Dr. LEISHMAN moved: "That the Council do now authorise the registration of the diplomas in Public Health recently obtained at the University of Glasgow by the following gentlemen—viz.: Thomas Kew Bell, M.B., C.M.; John Galloway, M.B., C.M.; John S. B. Laverick, M.B., C.M.; Douglas W. Russell, M.B., C.M. He had to ask the registration of these four gentlemen in circumstances which were peculiar. At the meeting of Council in June last it was agreed, on the motion of Mr. Carter, seconded by Dr. Heron Watson, "That the registrars be directed not to register any more of the diplomas in Public Health conferred by the University of Glasgow upon the examination held in October, 1889, without instructions in each case from the General Medical Council." The registration which he now proposed was not upon the examination held in October, 1889, but it was for gentlemen who took their diploma originally at that time. He thought he was justified in assuming, from remarks made at this Council, that the sympathy of the Council was strong in favour of certain gentlemen who manifestly out of so large a number must have been qualified to hold the diploma, and that they were ready to recognise favourably any attempt of the University of Glasgow to confer justice upon those individuals. So soon as the regulation of the General Medical Council was made known to the University Court they at once recognised the gravity of the case. They issued a circular to the gentlemen, in which they offered them the alternative either to return their diplomas and remove them from the Register, leaving them free to do as they pleased with regard to future registration, or to give them an opportunity of passing such an examination as this Council would certainly approve. They proposed that the registration of this examination should stand apart. In the end, only a small number of the candidates offered themselves for examination, but in the circumstances the University decided it to be right to provide an examination, and an examination which would carry conviction to every member of this Council as to its thoroughly satisfactory character. The examiners were: Sheriff Spens, Dr. Russell, medical officer of Glasgow; Mr. Wheelhouse, the distinguished member of this Council; and Professors Gairdner, Simpson, and Ferguson. He could, with every confidence, assert that no men were ever subjected to a more searching examination than those for whom he now asked registration. It was to him a matter of admiration that those gentlemen were bold enough to submit themselves to an examination which in the circumstances must inevitably be of a very exceptional character. He wished on this occasion to thank Mr. Wheelhouse for his extreme kindness in agreeing to go to Glasgow and act as one of the examiners. His presence at the examination, he felt, would give the Council additional confidence in acting in this matter.

Mr. WHEELHOUSE said that he had much pleasure in seconding the motion. All the members of the Council sympathised with the University of Glasgow, and when the application came to him to act as an examiner he had no hesitation in acceding to it. From close personal knowledge of the examination he could testify to its being of the most searching and satisfactory character. He was present every day of the examination. He attended the examination in the laboratory and in the slaughter-houses, and he was present at the examination when the candidates were assigned districts for examination and report and at the oral examination. He was bound to say that if ever an examination were complete and perfect it was this one, and if any four gentlemen ever earned the right to be registered for the diploma in public health those four gentlemen had certainly earned it.

Sir WALTER FOSTER said he was disappointed that they had only four of those gentlemen to register. He would have been very glad had a larger number taken part in this searching examination. He wished to congratulate the University of Glasgow on having taken the decision of the Council in such good spirit, and on having acted up to what was the general wish of the Council in this matter, The University of Glasgow had acted generously, and deserved great credit. The very holding of this examination justified the course which the Council adopted, and he hoped the University would maintain for all time the standard of examination set in this case.

The motion was then unanimously adopted.

Dr. LEISHMAN then moved: "That the Council do now direct that the University of Glasgow be added to the list of the bodies who have complied with the resolutions adopted by the Council of June 1st and Nov. 30th, 1889, in regard to examinations in Public Health."

Subject to the resolution of the Council in regard to State Medicine, passed during the present sitting, this was unanimously agreed to.

The Registration of Midwives.

On the motion of Mr. WHEELHOUSE, a committee, consisting of the President, Sir J. Simon, Sir Walter Foster, Dr. Quain, Dr. Glover, Mr. Wheelhouse, and Mr. Brudenell Carter was appointed to consider the provisions of any Bill for the registration of midwives which may be presented by the Government to this Council.

Mr. WHEELHOUSE explained that a Bill had already been introduced in the House of Commons, and it would be the duty of the committee to consider it or any other measure which the Government might present to them, and, if necessary, call a special meeting of the Council.

In reply to Sir WILLIAM TURNER,

Sir WALTER FOSTER said there was not the slightest chance of the Bill receiving a second reading before Christmas, although it was possible it might be reached before the meeting of the Council in May next. The Government, he understood, were rather favourably disposed towards the Bill.

The proceedings of the session were then brought to a close.

This concluded the business of the Council.

SURGICAL AID SOCIETY.—The twenty-eight annual report just issued shows that the income of the past year was £8535, an increase of £760. The patients assisted by the Society were 8970, making the total assisted since the Society's commencement 91,610; while 131,227 surgical appliances had been supplied. Nearly two-thirds of the patients were women and children.

THE LANCET.

LONDON: SATURDAY, DECEMBER 6, 1890.

NOTWITHSTANDING the excellent and business-like address of the President, the opening day of the recent session of the General Medical Council commenced in a disheartening fashion, and the gloom gradually deepened until it tinged the greater part of the work of the remaining days. The primary cause of trouble was the apathy which had been shown about the resolutions of the Council in regard to the diplomas in State Medicine. True to its later traditions, evidence of practical work both in the laboratory and in public health inspection was desired by the Council, and Sir JOHN SIMON thought the time had fully come for active measures. The difficulty, however, is that at the present time the Council knows nothing officially of the willingness of medical officers of health to undertake the education of pupils in sanitary science. No questions have been asked and no information has been received. On the other hand, the London County Council has decided by a large majority that its medical officers shall not be permitted to take pupils, and in Glasgow it was stated to be impossible to carry out the rule. In spite of so much discouragement, Sir JOHN SIMON'S arguments prevailed, and it was decided that the rule should be enforced after Jan. 1st, 1891. Then ensued the discussion upon the proposed increase in the number of direct representatives, which was ably introduced by Sir WALTER FOSTER and seconded by Dr. GLOVER. It was too much to expect the full force of arguments in favour of an increase of direct representatives to be welcomed by the Council. One member pathetically remarked that they had hardly got into working order when they were asked to upset the whole arrangements; and when it was further suggested that space could be found by suppressing five particular corporations, the proposal was doomed, and the "previous question" promptly carried. The second day was taken up with cases of discipline, and, in the main the work was carried out with leniency. One name was erased, and one application for restoration was once more postponed. To give greater force to Sir JOHN SIMON'S resolution, it was agreed to communicate to the Local Government Boards in England and Ireland, and to the Boards of Supervision of Scotland, the opinion of the General Medical Council as to the urgent necessity of affording candidates for sanitary diplomas opportunities of studying out-door sanitary work. The Council then approached Dr. GLOVER'S motion, which was intended to enforce additional guarantees of practical instruction in midwifery. Briefly, it requires that candidates at the final examination shall produce proof of having personally attended at least thirty cases of midwifery, and of having been attached as pupils for three months to a lying-in hospital or a maternity institution, with proper arrangements for clinical teaching. In the opening address the President had indicated the present unsatisfactory position by which each examining body fixed its own minimum, so that the number ranged from six to thirty, although the most frequent number was twenty-four. With extreme moderation, considering the importance of the question, Dr. GLOVER stated his case. In the training of midwives, they were required to attend a lying-in hospital for three months, and to attend twenty-five cases; he feared that midwives were better educated in midwifery than medical students, and in view of Parliamentary proceedings, the position became serious. The figures he had collected sufficiently showed that his proposal was reasonable and feasible, while its desirability was emphasised in his concluding sentence: "He believed that the great security of the profession was the practical education of its members and the accentuation of the difference between a mere midwife and a fully qualified and well-trained medical man." Then ensued perhaps one of the most remarkable debates, even of the General Medical Council—one in which it is interesting to remember the names and qualifications of the speakers, in association with the bodies they represent. Careful consideration of these facts will tend to explain much that is otherwise difficult to understand. Hitherto the Council has fought loyally for practical teaching, but Dr. LEISHMAN opposed the idea of a student requiring as much practical work as a midwife, because he started "with a theoretical knowledge of the subject." Incidentally, he appeared to furnish a clue to his opposition by referring to the "abundance of material in connexion with certain schools." Are the Scotch schools and the smaller schools really afraid that they cannot provide a sufficient amount of practical midwifery teaching? The course of the debate would lend favour to this view, and in no other way can the extraordinary leaguing of the forces be explained. No fewer than fifteen members took part in this debate, several speaking more than once: but in the end, although several amendments were proposed, it was decided to allow the present resolution to remain in force. This result is deplorable in the best interests of the medical profession. The General Medical Council thereby affirms that it views with equanimity the greater practical experience of a midwife as compared with the theoretical knowledge of a candidate for qualification. Minor matters brought the work of this day to a close, and on Saturday the report of the Pharmacopœia Committee was presented, and furnished an occasion for votes of thanks to all concerned, the labours of the British Pharmaceutical Society being particularly mentioned; and with this the latest session of the General Medical Council was brought to a conclusion.

THE food-supply of this country is a subject that increases in importance with the growth of our thickly teeming population, and is always a matter for serious consideration. To a very large extent we are dependent upon importations from other countries more or less distant; for these islands can only raise a comparatively small proportion of what we require for consumption. Among these importations flesh, whether in the form of live or dead animals, forms a considerable item, and is annually on the increase. The unrestricted ravages of exotic contagious

diseases for many years greatly discouraged cattle breeding in the United Kingdom, and made us more dependent on foreign supplies than we need have been, had prompt and proper measures been adopted to stamp out the long-prevalent and destructive disorders among our herds, and steps been taken to prevent their reintroduction from infected regions. The importation of flesh, as living or dead animals, now forms a great traffic from some of our own colonies, from the Continent, and from the United States, and is an absolute necessity. Therefore the conditions under which it is produced abroad, and the state in which it reaches us, form a subject well worthy of investigation by the sanitarian, no less than by the social economist; even the humanitarian will find much to interest him and to enlist his sympathies.

The immense improvements which have taken place in recent years in the preservation of food by cold, have enabled our most distant cattle-rearing colonies to send us a large instalment of meat, generally in excellent condition, as food; and no doubt this kind of traffic will go on developing in the future, as it has in the comparatively brief past. The amount of this dead meat supply is really surprising. In 1889 upward of 195,000,000 lb. of beef and mutton are stated to have been imported into England from various parts of the world, and in the first nine months of the present year the amount reached at least 187,000,000 lb., or an average for the year of 250,000,000 lb. The importance of such a traffic will be seen from these figures, and it is certain to rapidly increase, rather than diminish.

Live stock also arrives in great numbers, chiefly from the United States and Canada, the arrivals of cattle at Liverpool alone being probably about 5000 weekly; and it is this live stock traffic which is at the present moment attracting a considerable amount of attention. It is stated that the conveyance of cattle on shipboard is attended with heavy loss among, and great suffering to, the animals, as well as danger to the ships engaged in this industry. To such an extent have these reported losses, sufferings, and dangers been insisted upon, that a Parliamentary Committee is about to investigate them; and if a tithe of what has been stated be proved to be true, then it is earnestly to be hoped that a remedy will be found. There can be no doubt whatever that the carcases of cattle and sheep should be imported, instead of the living animals; for, notwithstanding the improvement which has been effected in the construction of the ships employed in the cattle trade, ruminants, of all animals, suffer most from ocean and railway travelling; and the immense distances by rail and sea which they have traversed before landing at our ports must necessarily lead to grave fatigue and hardship, even when the weather is not inclement. But when the weather is stormy at sea, then their sufferings must be acute, sometimes horrible, and only mercifully terminated by death, after being probably protracted for days. It has to be remembered that rumination with these animals is a most essential function in the process of digestion, and, for anatomical and physiological reasons, it can only be properly performed when they are in a recumbent position. But this is never allowed while they are in transit, as the allotment of space for each animal prevents comfortable resting; therefore rumination is impeded, digestion disturbed and deranged, and more or less malaise produced. The constrained position for weeks together, the disordered digestion, the foul air on board ship, and the feverish condition engendered thereby, must diminish the weight of the animals, and more or less damage their flesh as food. Indeed, a characteristic of such flesh when dressed is its yellowish tinge. We say nothing of the cruelty to which such animals are exposed while travelling, by the men in charge and others who cannot always be under supervision, or of the sufferings the cattle have to undergo in embarking and disembarking, especially if these operations take place at night. During spring and autumn the transatlantic traffic is attended with a greater amount of hardship and suffering to the unfortunate cattle than at other seasons. There are casualties among them all the year round, no doubt; but in stormy weather, when the ships roll and pitch, the suffering is terrible—ruptured muscles and tendons, fractured limbs, contusions and wounds, suffocation by slow asphyxia, and all the other horrors of a stormy passage cause great havoc at times. The absence of battens on the decks to prevent slipping; the packing of a large number of animals together; tying them round the horns, which often causes the rope to become embedded in the skull,—all this induces suffering of a more or less serious nature, and must greatly deteriorate the quality and diminish the quantity of the flesh of creatures which, above all, need a peaceful existence to thrive. We believe it is the custom at some ports, especially in the States, to hoist the cattle into the ships by their horns. This is barbarous. We may well ask the question, Why cattle should be subjected to all this torture, and exporters exposed to heavy losses, when the animals might be slaughtered on the other side of the Atlantic? With cold storage on board ship and on shore, meat can now be kept for an almost indefinite period; so no plea of risk of loss from meat spoiling can be urged in favour of continuing the live cattle traffic. The only reply of a satisfactory (?) character which we have received to our question, was that when these beasts—sickly, sour, and dejected, and with their flesh highly charged with deleterious waste products—were killed on arrival here, the meat could be disposed of as English fed, and so realise a much higher price in the market.

It would, we may safely assert, be much fairer to the consumers in this country to interdict the importation of living animals as food, and to insist upon receiving carcases only. It would certainly lead to the abolition of the hardships and sufferings these poor brutes now undergo, would ensure better meat, and avert the introduction of those contagious diseases which have cost the country so many millions of pounds, which have impoverished our agriculture, and require us to maintain an expensive system of inspection at ports all round our coasts. The middleman might perhaps complain; but as he is, so far as we can see, the only one who benefits from this stupid and cruel business, we need not consider him in the matter.

A NOTE of jubilation pervades the address delivered by Mr. FRANCIS GALTON before the Society of Arts. His well-known scheme has been recommended for consideration by the India Office, and the Civil Service

Commissioners are now considering the practicability of his proposal. When once the plan is fairly faced, he feels that the end is sure. The greatest difficulty of all is to rouse official apathy sufficiently to make further inquiries; but when the interest has been awakened, the attractive nature of his scheme is certain to win its way. Put briefly in his own words, he starts with the idea that "in selecting candidates to fill posts for which physical efficiency is desirable, it is proper that physical qualifications should be taken into account." This is no new topic, since he has written papers and delivered lectures upon it repeatedly during the past few years. Still, the question is not even now ripe for final settlement. Mr. GALTON does not pretend that in all its details the scheme is yet perfect, but, as he himself remarks, half a loaf is better than no bread. The chief hindrance lies in the fact that although abundant data have been already accumulated applicable to all ages and all ranks collectively, they have not been separated sufficiently to allow of accurate deductions applicable to the special class. The physical conditions of the "average man" have been determined, but these would have but little bearing upon the special class competing for appointments by examination. To be finally effective the scheme must of necessity be employed for a length of time tentatively. In this way only can a fair standard be ultimately adopted. When the scheme was originally mooted it was met by considerable misconception, so that Mr. GALTON finds it necessary to disclaim all intention of proposing athletic competitions, and to restate the directions of the inquiries he deems essential. They are sufficiently simple and thoroughly trustworthy, and they leave no latitude for uncertainty of judgment. They comprise (1) stature; (2) a few linear measurements to show whether the principal dimensions of the body were or were not well proportioned; (3) weight; (4) strength of grasp; (5) breathing capacity; (6) quickness of response to a signal by sound; (7) quickness of muscular action; (8) simple tests of vision; and (9) simple tests of hearing. All of these he finds by experience can be determined accurately in a little less than a quarter of an hour, and at an expense of sixpence a head, though he does not say how many must pass under review before the cost can be so reduced. This is, however, of minor importance as compared with the more difficult problem of assigning marks to the different persons examined. The conditions upon which he is at present disposed to lay stress are absolute strength, quickness of response, swiftness of muscular action, keenness of vision, and keenness of hearing. All of these may be present in a high degree, and yet bear no relation to mental capacity. This has not escaped Mr. GALTON'S forethought; indeed, it forms one of the criticisms to which he furnishes some very ingenious rejoinders. In introducing this new factor in competitive examinations he proposes merely that a candidate who is below par in physical powers should be above par in mental powers as a counterpoise. Obviously absolute rejection for unfitness in either direction should be possible, but the number of marks necessary to qualify for a chance of competition may be made up in either direction. Still all of this takes no account of a host of qualities which it is impossible to measure. Pluck, strong will, and endurance, together with a host of moral and other qualities, which, apart from sheer brute force, contribute to the making of a leader of men, are left out, not because they are of no account but because they are not conditions which can be estimated before the hour of trial. We believe that Mr. GALTON'S scheme is practicable and that it is desirable. Indeed, with certain restrictions it is quite conceivable that it might even eventually form part of a qualifying examination for the medical profession, which in so many of its branches makes very heavy demands upon the physical powers. But the scheme has its necessary limitations, and it would appear that these are reached just when inquiry is made regarding qualities of greater importance than any which can be weighed or measured. It is true that the proposed tests would take cognisance of something useful which has hitherto been disregarded, but it is equally true that the "unknown quantity" which contributes to the formation of a hero, or a leader who will gain and retain the affection of his subordinates, remains as vague as ever. Mr. GALTON frankly admits this, and in so doing recognises what in the view of most people forms the weakest point in the scheme.

IN a supplement to his last annual report Mr. MATTHEW ADAMS, the medical officer of health for Maidstone, gives a very interesting and complete account of a prevalence of diphtheria which, in a more or less severe form, attacked nearly a hundred of the inhabitants, and which, with periods of intermission, extended from December, 1887, to the end of 1889. The special interest which attaches to Mr. ADAMS' report lies in the fact that he believes he has discovered some such link in the causation of the disease as that which is referred to in a sentence which he quotes as embodying the views of Mr. SPEAR, whose hypothesis "contemplates the operation of some extrinsic agent upon a miasmatic, as opposed to a purely contagious principle in diphtheria infection." This link is a certain fluctuating state of subsoil water, and the views which Mr. ADAMS holds with regard to its influence are set out with that care which always characterises his public health work. Indeed, the labour which has been gone through in studying the subject, and in recording the barometrical, climatic, and other meteorological conditions bearing upon the theory enunciated, must evidently have been very considerable. As we understand Mr. ADAMS, his view would be that so long as the normal rise and fall of subsoil water took place in Maidstone, no conditions of soil existed which were especially favourable to diphtheria. The normal rise, which reached its maximum about March and April, washed the soil and cleansed it, and the steady subsequent fall was beneficial. But when in place of this a series of irregular oscillations continued, for a period of two years, and this in a soil which was in a peculiarly favourable state for the development of micro-organisms, then diphtheria was maintained. Immersion in water he believes to be fatal to the diphtheria contagium, as is also a drought; but the dampness of alternate rise and fall of subsoil water may probably be held to be especially favourable to the development and growth of the specific organism. And not only so, but there arises the possibility of germ-charged air being intermittently ex-

pelled by the rising subsoil water from the soil into the air breathed. Mr. ADAMS regards pollution of soil as necessary to the results he names, decaying albuminous matter being absolutely requisite.

The view thus expressed is very interesting, and Mr. ADAMS' diagrams, and especially one showing the relation of diphtheria occurrences to the varying level of the subsoil water, are certainly striking. The main question that arises is, whether other conditions favourable to diphtheria diffusion were not at the same time in operation; and it will certainly be necessary, before the theory laid down be accepted, that it should be endorsed by further facts. Hence the point raised by the Maidstone experience is deserving of the attention of all who are engaged in the study of the etiology of diphtheria, which is apparently becoming more and more persistent in our midst.

Annotations.

"Ne quid nimis."

THE RECONSTITUTION OF THE UNIVERSITY OF LONDON.

AT the end of the summer session, on Aug. 11th, a letter was sent from the Registrar of the University of London to the Lord President of the Council, explaining the various steps that had been taken with regard to the proposed reconstitution of the University. Since then a deputation from the provincial Colleges has been received by the Senate, and, as a consequence of their representations, it was understood that the latest revised scheme of the Senate would undergo further modifications. Last week a letter was sent from the President of the Council to the Senate, pointing out that the time had come for an immediate reply as to their intentions in respect of the application for a new Charter as suggested by the Royal Commissioners. It is obvious that this action must determine a crisis so far as the University is concerned, the latest opinions of which body have not yet been embodied in the modified scheme, and have not been presented to the Senate, much less to Convocation. As we have maintained throughout the whole of these negotiations, it is impossible that the various conflicting interests can be worked into any scheme that will satisfy the bodies concerned in the negotiations, as well as the graduates of the University, and be for the public advantage. The position of an Imperial Examining Board, which should be maintained at all cost, by the University, cannot but be endangered by its undertaking the duties of a Teaching University for London, and the latter function must be kept apart, as has been plainly stated by the representatives of the provincial colleges. The value of the pass degrees at present given by the University in medical subjects, and which are described by the Royal Commissioners as "Honours degrees," can only be deteriorated by the endeavour of the same body to institute pass degrees for the average London medical student on terms similar to those on which they can now be obtained by students in the other centres of medical education. We question whether any such proposal would have the slightest chance of being accepted by Convocation, which must be conjoined with the Senate in any application for a new Charter. We presume that the petition for a Charter for University and King's Colleges will soon come before the Privy Council—if the Senate of the University cannot comply with the demand of the Lord President—and that the formation of a Teaching University for London, which has been stated by the Royal Commissioners to be desirable, will again be referred to the Commission or be taken into consideration by a Committee of the Privy Council itself. We hope that the other metropolitan medical schools besides will take every care that their interests are safeguarded in view of such a contingency.

CHOLERA INTELLIGENCE.

WHILST cholera is still diminishing in the province of Seville, and has, indeed, been announced to have ceased, the state of Gilena remains serious. The villages around have constituted sanitary cordons for their protection, and armed men are stated to prevent egress from the affected place. There is also a rumour as to some cases having occurred at Puerto-Santa-Maria, in the Bay of Cadiz; as also at Derocca, in the province of Saragossa. The lazarets constituted on account of the cholera in connexion with the Mecca pilgrimage of this year are now empty, and no spread of the disease is known to have taken place by means of the Suez Canal. As regards Syria, it is believed that in the villayet of Aleppo, and in the two towns of Hamah and Homs, in the villayet of Damascus, there have been from 3500 to 4000 cholera deaths, and it is feared that there are indications of a spread northwards in the direction of the Black Sea. Adama has already been a seat of the disease, and a fatal case is now stated to have taken place at Mersin.

TRIALS OF KOCH'S LIQUID ABROAD, AND OPINIONS OF THE MEDICAL PRESS.

IN France the reception of Professor Koch's discovery by the medical press has been fairly cordial. Some journals, as the *Gazette Médicale de Paris* and the *Progrès Médical*, are content with giving abstracts of the recently published reports from Berlin, the last named expressing surprise at the moderate and somewhat vague terms in which the action of the remedy is now being spoken of, compared with the more enthusiastic language first held. *L'Union Médicale* (Nov. 27th, 29th, and Dec. 2nd), has followed carefully the progress of events. It points out that more caution is being used in its employment, especially in view of its liability to induce acute pulmonary œdema in lung tuberculosis, or œdema of the brain in meningeal cases, or of the glottis in laryngeal, &c. Surgical cases are more amenable to treatment because of the readiness with which the diseased parts can be completely extirpated after the remedy has exerted its necrotising effect. It refers to von Ziemssen's opinion that lung cases will require prolonged treatment. M. Villaret, writing from Berlin to the *Semaine Médicale*, insists on there being a certain idiosyncrasy in the extent to which the injections are borne, and cites three cases treated by the same doses, in one of which a typical reaction took place after fifteen hours, in a second an "atypical" one after three hours, and in the third a weak but typical reaction after ten hours. *L'Union Médicale* thinks that we are still much in the dark, and points to the fact that relapses have already occurred in lupus cases: it is an error to believe that we are at all near proofs of its real therapeutic efficacy. At the Laennec Hospital on Nov. 30th MM. Cornil and Chantemesse inoculated six patients—two being cases of lupus, two of early pulmonary tuberculosis, and two of surgical tubercular affections. In one of the lupus cases, a young man of eighteen years, 0·002 c.c. was injected, and reaction began five hours after, the temperature reaching its maximum in twelve hours (39·2° C. from 37·2°). The appearances were precisely similar to those described by all who have tried the remedy in lupus. There was an equally marked

reaction (maximum temperature 39·4° C.) in a case of early phthisis, with headache and nausea, and slight auscultatory changes attributed to congestion. M. Pean on the 29th inoculated several cases at St. Louis Hospital. He expressed the opinion that Koch was justified in withholding the nature of the remedy at present, and insisted on the danger of incautious administration. Dr. Moreau of Algiers asserts that in some well-marked tubercular cases no reaction has followed injection, and that in some non-tubercular subjects reaction has been observed. In one case of Leyden's the fever set up by the injections continued after these were discontinued. *La Province Médicale* (Nov. 29th) thinks that enthusiasm is giving way to uncertainty, and avers that in pulmonary cases its action is very limited, and that, although it may cause diminution in expectoration of bacilli and in night sweats, its use is not followed by any gain in weight or strength. Much is required to be known concerning the length of time that such cases have to be treated. The *Gazette des Hôpitaux de Toulouse* defends Koch for his reticence, since he was forced to publish his results prematurely. It says that in showing that the "lymph" has an elective affinity for tubercular tissue, his researches are to be greatly praised. It raises the question as to the desirability of "curing" the phthisical. The *Allg. Wiener Med. Zeitung* (Nov. 25th) devotes much space to contributions on the subject, including one by Dr. Buchner, of Munich, who points out that inflammatory action may play the chief part in the destructive process. The *St. Petersburger Med. Wochenschr.*, No. 46, Nov. 17th (29th), states that on Nov. 11th (23rd) Professor Anrep gave an address on the subject, and inoculated three lupus cases with some of the "lymph" given him by Professor Koch. Other delegates have also gone to Berlin, and many physicians from all parts of Russia. The remedy has also been used in Professor Baccelli's clinic at Rome, as described in another column.

THE SANITARY STATE OF LANCING.

SOME preliminary discussion is now going on as to the best method by which to secure for Lancing a wholesome and sufficient water-supply; but no decision has as yet been come to. On the other hand, the question of adequate drainage instead of the present cesspool system does not appear to receive the same amount of attention. Both steps are, however, necessary if Lancing is to be freed from risks such as the place has just experienced.

EFFECTS OF AROMATIC BATHS.

DR. VOSKRESENSKI publishes in the *Vrach* some observations on the effect of aromatic baths on the system. The baths were prepared by putting rather more than one pound of a mixture of equal quantities of aromatic herbs (camomile flowers, lavender, curled mint, rosemary, wild thyme, and sweet flag) into a muslin bag and letting hot water run through it into the bath, which was therefore an infusion, and had the colour of tea. The temperature at which it was taken was 96° F. In some of the observations the surface was covered with a film of oil, in order to prevent the aromatic vapour from getting into the air passages. When no oil was used the results were:—Nitrogenous metabolism diminished while the baths were taken, and afterwards increased to nearly the same amount as before. The nitrogenous assimilation increased, both during the course of baths and for a time after they had been discontinued. The nitrogen in the partially oxidised products diminished as compared with that of the urea. The weight of the body in some cases increased, in others diminished. The temperature of the axilla half an hour after the bath was about half a degree lower than before. The pulse became somewhat slower and fuller, and the respiration slower and deeper. The blood-pressure was increased, the increase continuing for at least four days after the cessation of the baths. The capacity of the lungs was slightly diminished, but the force of inspiration and expiration was decidedly increased, as was also the sensibility of the skin. The muscular force was generally slightly diminished. The loss by skin and lungs was considerably increased. The quantity of urine was diminished, its specific gravity being raised. When oil was used, the nitrogenous metabolism increased, the increase being greatest after the baths had ceased. The nitrogenous assimilation decreased and the weight of the body also decreased. In other respects the results were the same as when no oil was used. The patients were observed, and estimations of their secretions made, for three periods of four days each, before, during, and after the baths.

THE URINE IN CHILDREN'S DISEASES.

M. P. BINET, writing in the *Revue Médicale* on the Urology of Children, states that albuminuria is the rule in febrile infectious diseases, only slight traces existing in the majority of cases. It is generally most severe in diphtheria, independently of the necessary correlation with the fever and the gravity of the disease. The detection of peptonuria is subject to error. Peptonuria is not very common in children, at any rate in appreciable quantity. It usually coexists with albuminuria, and it is most frequently observed in diphtheria, especially in the graver forms, and in nephritis. Diaceturia is common in infectious diseases, and especially in scarlatina. It is exceptional in simple uncomplicated diphtheria.

THE NATURE OF DR. KOCH'S LIQUID.

WE may reasonably expect that within a very short time the profession will be placed in possession of such details concerning the nature of the material discovered by Professor Koch to have so powerful an effect upon tubercular tissues as may set at rest the "secret remedy" question. This at least may be gathered from the important statement made on the 29th ult. by Herr von Gossler in the Lower House of the Prussian Diet. It has seemed to us no compliment to Professor Koch to regard the result of his scientific investigations in the same light as other so-called "cures" and quack remedies, but at the same time we have felt that there could be no possible harm accrue from such an exposition of his researches as might satisfy the most delicate scruples. Nay, we believe that no difficulties will be placed in the way of competent bacteriologists being instructed in the methods in Professor Koch's laboratory. What, however, is essential, in the interest of medical science and of the tubercular patients themselves, is that the material, wherever made, should be thoroughly tested as to its reliability before being placed in the hands of practitioners. A fortnight since we ventured to suggest as a feasible plan to meet this requirement, that each specimen of liquid wherever prepared should be certified by a central and responsible authority. The Prussian Minister hinted that the State would undertake this responsibility, in the following declaration. He said: "A feeling of satisfaction will be experienced throughout the world if Prussia sets her stamp upon the lymph, but a guarantee must be given that there is no question of financial or other subsidiary considerations. The Government would eventually invite other nations to send representatives to study the remedy and make it known in their respective countries." We can endorse this satisfaction, and accept the assurance that nothing of a commercial speculation will be made of the remedy. That five grammes of the fluid, sufficient for 5000 injections, should cost 25 marks is not surprising, and, in-

deed, it shows that it is, *quoad* its alleged effects, perhaps the cheapest drug ever placed in the market. It is noteworthy that secret remedies are nowhere so sternly discountenanced as in Prussia. Moreover, we learn that on the left bank of the Rhine, where the Code Napoléon is still in force, it is absolutely illegal to use any remedy the composition of which is unknown, and even a newspaper writing in favour of it is liable to a fine. Finally, we would call attention to the subjoined statement made by the Vienna correspondent of *The Times* of the 3rd inst.:—

"The Vienna Board of Health has passed the following resolutions:—The inoculation of out-patients with Dr. Koch's lymph is not be permitted for the present. Every case of inoculation is to be notified to the authorities, and both physician and patient are to be closely watched. The origin of the lymph must be exactly described in each instance. An order from the Minister of the Interior based on these resolutions will be immediately published."

The need for such stringent surveillance is, we regret to learn, due to the doubtful character of the practice which has arisen in that city. Apart from this, the highly dangerous nature of the remedy must necessitate the greatest caution in its employment.

THE RECENT OUTBREAK OF TYPHUS FEVER AT BIRKENHEAD.

CASES of typhus fever still continue to be reported to the health officials in Birkenhead, five fresh cases having been admitted into the fever hospital during the week before last. Another nurse has been attacked, being the third of these very useful officials who has fallen ill at the post of duty during the present outbreak. Two circumstances are worthy of special notice, showing the risks which are incurred during similar visitations. An inquest was held by the borough coroner, Mr. Churton, upon the body of an infant five weeks old, which had been found dead in bed. In consequence of the prevalence of fever in the house the body of the infant was brought out into the street to be viewed, so that the coroner and jury might be spared the risk of infection. It is not stated whether it would have been possible to effect the "view" through a window; but where this is not impossible, as it can seldom be, it would be a more decent and equally satisfactory method of meeting the difficulty, and would prevent the sensational paragraph "an inquest opened in the street." The other circumstance was that a parochial official named Downs was sent to remove two persons who had been stricken with the fever. Downs, meeting with obstruction on the part of some of the friends, had to dress them both and carry them out in his arms to the ambulance. This was one instance of many, and the guardians unanimously awarded Downs £10 for extra duties performed during the prevalence of the fever. There appears to be a general concurrence of opinion that a new hospital for infectious diseases is required, but the decision as to the site and other details have been left for further consideration.

THE ETHICS OF MEDICAL DISCOVERIES.

EVEN before the exact reach of Koch's discovery is or can be defined, it is well to remind ourselves of the temptation which the present condition of affairs brings with it. Nobody is yet in possession of the secret but Koch himself, and perhaps one or two persons in his immediate confidence. The temptation we speak of seems to be well controlled by Koch himself. But if accounts be true, some of his assistants seem not to be so successful. Then there comes the crowd of men who have been to Berlin, who are tempted to write letters to lay newspapers, or otherwise to ventilate their travels and their observations, to describe to an expectant world the syringe used, and the colour of the precious fluid, finishing off with an intimation that they have been favoured with a little of the liquid for experiment in a certain place where the powers of the remedy may be most signally displayed, and crowning all with the mention of a lady who came to Berlin six weeks ago "in the most advanced stage of consumption," and who is now "comparatively cured." This is the drift of a letter and flattering leaderettes thereon in a local paper. We are not going to be too hard on the author, or on others who yield to the seductions of the interviewer, who has really become one of the bores of life. But we utter a word of friendly warning to all concerned. It is bad enough that Koch's own hand should have been forced before he was quite ready to define the applicability and uses of his remedy, and perhaps to raise hopes only to have them dashed to the ground, but let the profession not aggravate this evil by newspaper discussions and statements. Its traditional rule in such matters is to proceed noiselessly, without personal intimations, to test new remedies, and to keep the discussion within the bounds of the profession and its own societies and journals. There is one other point in connexion with this subject to which it is impossible to forbear alluding. We refer to the extent to which the purely medical details of a great discovery have been reported and discussed at length in the lay press. It is impossible to conceive the amount of injury that may have been inflicted on sensitive minds by these publications—the hopes that have been raised only to be defeated, whilst the portals of pathological science have been thrown widely open to the ignorant, the credulous, and the weak.

ANTI-VIVISECTION AND THE ROYAL SOCIETY.

THERE was a significant outbreak of feeling at the Royal Society on Monday night, when Dr. Hopkinson, who had received one of the medals of the Society for his researches in Electricity and Magnetism, alluded to the subject of vivisection. He was returning thanks for Dr. Ferrier and the other medalists. Dr. Ferrier had well won the medal for his researches into the localisation of brain function, with a view to surgical and therapeutic purposes. Dr. Hopkinson, alluding to the splendid work of Pasteur and Koch, said that Dr. Ferrier's researches showed that, with anything like similar conditions, the discoveries of Pasteur and Koch would be equalled by men in our own country; but in this respect we are hindered. We do not live "in a free country." If a few more great discoveries have to be studied, as a favour, in Paris or in Berlin, and our *savants* have to be sent there for the purpose, Englishmen will be apt to doubt whether they are acting kindly by man or beast in tying the hands of their best investigators, who have done more to mitigate suffering than the Society for the Prevention of Cruelty to Animals itself. Dr. Hopkinson said that had he been hampered in his experiments as physiologists and physicians are, he could never have made the discoveries which Sir William Thomson says affect the whole range of physical science.

DESTRUCTION OF BACTERIA IN THE BLOOD.

THE conditions under which bacteria are destroyed in the blood have lately been examined by Professor Fodor of Buda Pesth, who has obtained some very interesting results. His experiments were mainly conducted with anthrax bacilli. He found that the bactericidal power of arterial blood was much greater than that of venous blood; also that bacteria were more easily destroyed in fresh blood than in that which had been standing for some time. An atmosphere of oxygen or of carbonic acid made no difference, neither did the deprivation of the blood of all gases.

Again, it made no difference whether the blood was at rest or in circulation. The temperature, however, had a great effect, the greatest destructive power being between 100·4° and 104° F. Above 104° there was a marked decrease of the bactericidal power. There was found to be a great difference, not only between animals of a different genus, but between different individuals of the same genus. Various chemical substances were introduced into the blood together with cultures of virus, with the following results. Hydrochloric acid had but little effect; acetic acid and quinine diminished the bactericidal power; common salt slightly increased it, also carbonate of ammonium; while a marked increase was produced by phosphate, carbonate, and bicarbonate of sodium, and by carbonate of potassium. It appeared therefore that alkalinisation of the blood by artificial means might be applicable for the purpose of preventing the development of the bacilli of infectious disease in the organism. A large number of experiments were undertaken with the object of elucidating this point. Rabbits were given large doses of bicarbonate of sodium either by the stomach or by intravenous injection, and half an hour afterwards an intravenous injection of anthrax culture, further doses of soda being regularly administered three times a day. It was found that only about one-sixth of the animals so treated contracted anthrax, though a good many died either from catarrh of the stomach or from some other cause; more than a third, however, entirely recovered; while other animals to which the same quantity of culture was administered invariably died from anthrax. It would thus appear that alkalinisation by means of drugs offers some prospect of being useful as a remedial measure in cases of infectious disease, at all events in anthrax.

MONOPOLY OF HOSPITAL APPOINTMENTS AT BRISTOL.

OUR readers will remember that a very stout fight has been made at Bristol by Scotch and Irish—or, rather, perhaps, by Irish and Scotch—diplomates against the rule of the Bristol General Hospital, which restricted hospital appointments to those holding London qualifications as distinguished from those of Ireland or Scotland. The reformers were anxious to have this restriction removed, and a declaration made in the rules that the qualifications of Edinburgh and Dublin were equal to those of London. The restriction has been removed, but the declaration of equality has not been made. The monopoly has been abolished by the governors determining that henceforth "posts shall be open to any candidates, whatever their qualifications or diplomas, provided they are legally qualified to practise as surgeons or physicians." The governors declined the declaration of equality on the ground that they were not able to judge of this point. It would be difficult to deny that here they have reason on their side. It would require experts in medicine and surgery to decide the comparative severity of the examinations for the degrees and diplomas of London, Edinburgh, and Dublin respectively. The determination of the value of these higher qualifications, to be of any use, will have to be done under authority, and by competent persons. The abolition of monopolies of this sort is a matter for congratulation. Still, we are not quite satisfied with the short and easy method of escaping from this difficulty. A man may be "legally qualified" for ordinary medical work and yet be unfit for a hospital appointment, in which he will have to treat the gravest cases, decide the gravest questions, and perform the most difficult operations. Surely for such appointments higher qualifications may be demanded, and ought to be required. The new rule is calculated to multiply greatly the number of candidates for appointments without giving any corresponding promise of higher attainments. We do not understand the Bristol reformers to have wished for this form of rule, or to be satisfied with it. They properly recognise higher and lower qualifications. They do not object to such distinctions, but only to purely territorial distinctions. The new rule will throw additional responsibility on the governors or on the committee of selection, to judge by other criteria than bare legal qualifications.

ADDENDUM TO THE BRITISH PHARMACOPŒIA.

THE Addendum to the British Pharmacopœia of 1885 has been approved by the General Medical Council, and it has also been resolved that 5000 copies shall be printed and that the price of each shall be one shilling. Some months back we published the list of new substances and preparations which had been agreed upon after reference to numerous authorities. This list has been extended by the addition of acetanilidum, phenacetinum, and pulvis sodæ tartaratæ effervescens. The introduction of four subsidiary articles—namely, wool fat, Fehling's solution, gelatine, and the bark as well as the leaf of witch hazel—has been found to be necessary for the production of some of the additions mentioned in the original list. The presence of antifebrin and phenacetin will probably cause some surprise, for although they are largely used in hospital practice, they have scarcely been generally adopted by the medical profession, and protests against their employment are frequently made. The collection has been so carefully compiled by the Pharmaceutical Committee, by Professor Attfield, and by a Committee of the Pharmaceutical Society of Great Britain, that it is worthy of the most close consideration and study. Meanwhile the ingenuity by which the difficulty of "registered names" has been overcome calls for special mention. "Phenazone," "trinitrin," "gluside," and "adeps lanæ hydrosus," or "hydrous wool fat," are the new titles by which "antipyrine," "nitroglycerine," "saccharin," and "lanoline," respectively, become official. The new names—with, perhaps, the exception of "trinitrin"—are scarcely likely to displace the old. Perhaps, now that the more dangerous of these drugs are official, the glamour which formerly surrounded them will be lost, and they will be employed less promiscuously by the public.

HÆMOLYMPH GLANDS.

IT might be thought that after the careful search that has been made in all the tissues of the animal body it would be almost impossible to find a structure that has up to the present remained undescribed; yet Mr. W. F. Robertson, working under Dr. Wm. Russell, in giving a careful histological description of his so-called hæmolymph glands, has opened up a new field for histological and pathological research. From the description given, which will be found in our impression of last week, the hæmolymph glands appear to be a kind of cross between the spleen and the lymphatic glands, as almost all the structures that Mr. Robertson describes may be found in one or other of these organs, although they have never yet been figured as he finds them arranged. Most observers who have noted the existence of the small prevertebral blood-red points have assumed that they were simply lymphatic glands, the cortical spaces of which were distended with blood, and, although every butcher can point them out, it appears that no one has hitherto had sufficient curiosity to determine him to examine these structures microscopically. The large cells, with their colourless subdivided nuclei found in the sinuses, appear to be somewhat similar in character to the large red blood-corpuscle-forming cells that have been described in the spleen, and even free in the blood circulation, and it will be interesting to note whether it is possible to make out any relation between the

cells in the blood and those in the hæmolymph glands. Although at first sight it might appear that Mr. Robertson's observations may lead to further complications in the study of the blood-forming and blood-destroying functions, we may hope that a careful study of the structures that he has so well described may allow of further light being thrown on these subjects. We are gradually drifting further and further away from the idea that special functions are necessarily bound up in special organs. That there is a special development in certain kinds of tissue in special organs, and consequently that certain functions are here carried on more actively, all will admit; but we are gradually coming to see that such functions as the glycogenic, hæmogenic, and the zymogenic are carried on in every part of the body, and that the various differences as regards these functions in the various tissues are those of degree rather than those of kind. Most of our readers who have studied Mr. Robertson's paper will look forward with interest to a further development of his description, and for the conclusions, as regards the function of the organs, to which he may be led by a further study of their histology and pathology.

THE MICROBE OF MALARIAL FEVER.

WE have been requested by M. Daruty de Grandpré, director of the Microbiological Laboratory of the Royal Academy of Arts and Sciences at Port Louis, Mauritius, to correct the impression conveyed by Dr. D. E. Anderson in his paper on Mauritius Fever published in THE LANCET of Aug. 23rd, that the malarial microbe of Laveran had been identified in the blood in "eleven out of fifteen cases" that he had examined. In a letter addressed to *Le Cerneen* (Oct. 18th), a journal of Mauritius, M. de Grandpré relates that he pointed out to Dr. Anderson, who had brought him his specimens, the presence of bright spots in the red corpuscles which he had long recognised and had always regarded as vacuoles rather than extrinsic bodies; and that it was not until Dr. Anderson had returned to Paris and had shown his drawings of these appearances to Dr. Laveran that they were identified by the latter as the "parasites" in question. The same journal contains also a letter from Dr. Chevreau in the like sense.

ST. JOHN AMBULANCE CLASS AT BROADMOOR ASYLUM.

AT the meeting of the Council of Supervision held on Thursday, the 27th ult., at Broadmoor, the chairman, Sir Warwick Morshead, Bart., presented the certificates of the St. John Ambulance Association to those members of the staff who had passed the examination. He also presented three prizes, given by the medical officers to those who gained the highest number of marks in a special examination. The superintendent (Dr. Nicolson), in presenting the twelve successful candidates, stated that Dr. Pope, one of the assistant medical officers, had during the summer months lectured to those members of the staff in the male division of the asylum, who enrolled themselves in the class. As many as forty-five joined, but of these only twelve cared to face the written and oral examinations held with a view to getting a certificate. The examination was conducted by Brigade-Surgeon Clarke, A.M.S., of the Royal Military College, Sandhurst, who stated that the whole of the twelve candidates passed most creditably. Sir Warwick Morshead said he was very pleased to find that Dr. Pope's efforts for the good of the staff had been so well taken up by them, and that such excellent results had been produced. In an institution of this sort, it was a most desirable thing that the attendants should make themselves acquainted with such work as the St. John Ambulance Association made it their duty to inculcate upon all members of the community. Mr. John Walter added his testimony to the great benefits that resulted socially from the work of the Association. He himself was acquainted with one instance where a lady had been undoubtedly the means of saving a life by a timely and successful application of a tourniquet. He congratulated the staff upon the advantage they had taken of the opportunity given to them, and he also congratulated the successful candidates upon having done so well in the examinations.

MEDICINAL BONBONS.

LATEST among the fancies with which fashion is amused the medicinal bonbon has entered the circle within which Turkish delight, chocolate, and a variety of named and nameless delicacies of confectionery have long been used to bribe the *ennui* of idle hours. As a plaything it is, no doubt, serviceable in its way. A kind of scientific toy, it may be regarded as in some sort the visible embodiment of the spirit of popular physic, now so fully described from the position of "cart before the horse" by a multitude of papers and pamphlets. Fashion though it be, however, there is nothing to recommend this curious little custom. It has, on the contrary, serious disadvantages. It is not free from danger. We may say that it is mischievous chiefly in two ways. First, by encouraging an altogether artificial habit of life, it must tend to weaken those physical processes which are never so healthily active as when they are allowed to work by the simplest and most natural methods. Even wholesome tonics, if introduced when not required, are open to objection on this ground. They are apt to create a habit and a new desire, with all the craving dependence which this implies. Secondly, the drug employed must in many cases be itself injurious to a normal or fairly normal condition of body, and the consequence of establishing a habit in such a case is manifestly most pernicious. In full view of all the accumulated misery wrought throughout many years of indulgence in the alcohol or the morphia habit, it is impossible for anyone to deny the truth of these remarks. Whether it be morphia, red lavender, quinine, or coca, the principle involved in this childish novelty is the same. The play in each case is with an edged tool, and the sharpness of that edge is but a matter of degree.

METROPOLITAN ASYLUMS BOARD.

THE return of fever cases, submitted to the Metropolitan Asylums Board at their meeting on Saturday last, seems to confirm the hopes we had expressed respecting the abatement of the epidemic of scarlet fever. In the fortnight ended Nov. 22nd there were notified 871 cases of scarlet fever, or 67 under the number in the preceding fortnight, and the admissions of fever patients into the hospitals of the Board were 451, as against 464. As we anticipated, there has been a considerable increase in the discharges from hospital of scarlet fever patients, the result being a reduction of 116 in the number under treatment on Nov. 27th. There were at the date of the return 1301 cases of scarlet fever under treatment in London, and 651 convalescents from it in the Northern and Gore Farm Hospitals. There is still a considerable prevalence of diphtheria, the notified cases of which showed an increase of 27 in the fortnight, and the number under treatment in hospital an excess of 7. There were 209 beds available for scarlet fever cases in the hospitals in London, and 94 for convalescents in the Gore Farm Hospital, being an excess of 97 over the preceding period, and there were 30 beds for the reception of patients suffering from diphtheria. At the meeting of the Board an interim report was brought up from the General Purposes Committee on the subject of providing

additional hospital accommodation for fever patients. The number of beds available for infectious fevers, exclusive of small-pox, is 2429, of which 480 in the Northern Hospital are allotted for convalescents. The committee is of opinion that the provision of a fever hospital with accomodation for about 400 patients is indispensable for the relief of the Eastern Hospital. The Board authorised the committee to take steps to ascertain what eligible sites are available for the purpose. The committee of the Leavesden Asylum reported that apartments for clinical assistants are now ready, but in the absence of applications for the post they had not felt justified in furnishing them. A recommendation from the Statistical Committee that the authority of the Local Government Board should be requested for incurring the necessary expense of preparing and printing "spot" maps of London, showing the distribution of the notified cases of infectious disease in 1890, was adopted.

DOCTORS' FEES.

AN action tried on the 26th ult. by Mr. Justice A. L. Smith and a common jury illustrates afresh the serious risks which medical men in the course of their professional duties have to encounter of losing their well-earned fees. The defendant was apparently, at the time of the illness during which the attendance had been given in respect of which the action was brought, in affluent circumstances. It was not contended that anything which had happened subsequently had affected the lady's personal ability or liability to pay; but the action was successfully defended on the highly technical ground that an allowance made to a woman judicially separated from her husband by way of alimony is not separate property in the legal sense, and is not therefore chargeable with the wife's debts. Seeing that such a defence can succeed, it is perhaps fortunate that only a very few debtors can be found both able and willing to set it up. It may be that some among our readers may be warned by the incident to look after their own interests in time, but from such a fact it seems hopeless to draw any general inference, unless it be that no possible prudence or circumspection affords a complete protection against thankless patients and technical defences.

THE LONDON HOSPITAL NURSING CONTROVERSY.

IT is impossible in view of what occurred on Wednesday last at the Governors' meeting of the London Hospital, that those to whom the general interests of the medical charities of the metropolis are dear should abstain from expressing regret at the course then adopted by those who represent the managing body of the institution. That some strong feeling should be experienced and even manifested can occasion no surprise, for unhappily the controversy which has arisen upon the nursing system of the hospital has to a large extent assumed a personal character. But that this element should be chiefly imported into the discussion by prominent members of the committee, who speak in a more or less representative character, is greatly to be deplored. We certainly feel bound to deprecate the language by which, according to the report of Wednesday's proceedings, the critics of the hospital were dealt with. The attack made upon Mrs. Hunter was, in our opinion, certainly unjustifiable. Mrs. Hunter may be mistaken in the view which she takes. We think, for example, that the case of a probationer nurse is not so exactly like that of a medical student that the same disciplinary system can be applied to both. The connexion of the probationer nurse is, in some respects, so much more intimate with the institution in which she serves than is that of the student with the hospital, that the attempt to draw a parallel between them, and to argue from the one case to the other, is misleading. To this extent, at least, we incline to think that Mrs. Hunter puts her case too high. But we do not gather that she was met by any of the arguments which perhaps it would have been easy to adduce. On the contrary, her speech was cut short by disorderly interruptions, and even for a personal explanation she found audience only upon the chairman's intervention. Sir E. H. Currie appears to have declared that the whole controversy had grown out of a feeling of petty spite. His reported language was that "It was the old story of one woman getting her knife into another woman." Seeing that Mrs. Hunter has undeniably drawn attention to some weak points in the London nursing system, such a reply to her strictures will probably cost the London Hospital more in public sympathy than all the evidence given before the Lords' Committee taken together.

THE LATE ALPINE SEASON.

NOW that the Alpine climbing season is quite over for this year a glance at its casualty list may not be without advantage. Unhappily this is a somewhat full one. It possesses, moreover, a sad peculiarity in the fact that the number of guides who have lost their lives is unusually large. This of itself would seem to indicate the action of some other cause or causes than mere neglect of caution. In a pastime which is essentially and highly dangerous, and which is always carried on under truce with treacherous weather, such occult causes are ever active. It is true that they are not inevitably mischievous, for, though we cannot control the elements, we may at least secure ourselves by making due provision against their influence. The mountain climber if an amateur must be careful above most men in his choice of weather. For this reason he will be wisely guided in avoiding the uncertain spring and fall which limit his term of adventure. Let us here also note a fact so evident that it is often overlooked—namely, that nothing is more variable than the climbing power of different persons. One man's Righi may be another's Mont Blanc. It is for each to know his measure and to regulate his energies accordingly. Our space will not permit any lengthy discussion of the more avoidable risks with which the records of mountaineering have made us painfully familiar. Faults of equipment, insufficient guidance, in particular the folly of climbing with a single companion or with none, the ambition to excel on difficult peaks while still unskilled in lower ascents, over-confidence and rashness in various forms, need only be briefly mentioned here. The very recital of these faults is enough to prove how much depends in mountain climbing, as in other matters, upon the sacrifice of mere show, and the possession and use of cool, reasonable, and mature common sense.

THE CUSTODY OF LUNATICS.

A CORRESPONDENT informs us of a case which has occurred in his experience of a lady of unsound mind who has been consigned to a lunatic asylum at the instance of her trustee, notwithstanding that the lady's mother was desirous of undertaking the custody of her. Our correspondent regards it as a case of great hardship, and suggests that the mother is or ought to be legally entitled to exercise the office of custodian of her own daughter. We understand the provision of the Lunacy Act in such a case to be that if the mother is a fit person to be entrusted with the custody of the lunatic, and able to provide her with suitable accommodation, she may apply to the magistrate who made the reception order and obtain from him a further order superseding the first and investing the mother with

the power she seeks. But it is only reasonable that in such cases great circumspection should be exercised by those who are called upon to act with the authority of the law. A sad tragedy, which a coroner's jury investigated on Tuesday last, is a striking example of the mischief which may result from substituting domestic custody for the more effective control of persons of unsound mind, even when the condition of the patient is perfectly understood, and the intention of the parties is all that can be desired. It cannot be too clearly perceived or too generally recognised that the treatment of the insane should be directed to effecting the relief of their malady or, in curable cases, to its cure. As often at least as not, the true interests of the patient not less than those of his immediate circle of friends are consulted by removing him from domestic surroundings to those of a well-ordered asylum.

THE HOSPITAL SUNDAY FUND.

AT the recent meeting of the Council it was shown that the last collection reached £42,814, as against £41,744 in 1889 and £27,000 in 1873, the first year of the fund. St. Jude's, South Kensington, again heads the list, with a collection of £1258. The rise of about £1000 in three successive years is a good proof that the fund holds a strong place in the conscience of the churches of all denominations. But the sum is still terribly disproportionate, both to the wants of the hospitals and the ability of the religious community of London. One thing never fails in this cause, and that is the hearty sympathy and help of successive Lord Mayors. Happily the present Lord Mayor shows every indication of sustaining the tradition of his predecessors in this matter.

DR. BACCELLI'S EXPERIMENTS WITH KOCH'S LIQUID.

AN Italian correspondent writes:—"On Saturday, 29th ult., in the Clinica-Medica of Rome, Dr. Baccelli, in presence of a numerous assembly of practitioners and students, injected Koch's liquid into two patients suffering from lupus. One of them, aged thirty-two, had been admitted for lupus serpiginosus of the nose; the other, aged twelve, for lupus hypertrophicus of the lower lip. The injections were made at 11 A.M., the first patient receiving, hypodermically, a centigramme of the liquid diluted in a cubic centimetre of distilled water; the second (in consideration of her youth), a milligramme of the liquid, likewise dissolved in a cubic centimetre of distilled water. At 4 P.M. nothing remarkable was observed in either patient, except, in the first case, a slight rise in temperature and in pulsation. At 5 P.M. temperature in the second case began to rise, until, at 9 P.M., it reached 40° C., pulse 140 per minute. On her breast appeared a scarlatiniform exanthema; the seat of the lupus swelled enormously, with deep red suffusion of the surrounding parts, and a copious discharge of turbid serous liquid ensued. Later, vomiting supervened, recurring at intervals. At the same time, the fingers of both hands exhibited a notable swelling, with reddish marks scattered over them, especially round the nails. As the temperature subsided, all these symptoms gradually decreased; the seat of the lupus became dry, remaining covered with blackish incrustrations, while the swelling diminished. The importance of Koch's remedy for the differential diagnosis of many maladies was clearly manifested in this case. The tuberculous nodes discovered on the fingers of the second patient had, previously to the injection, been unobserved by the physicians. At 5 P.M. of the 30th her temperature was 38·3°, and her state highly satisfactory. Dr. Baccelli had injected a much smaller dose into this patient than that recommended by Koch, and the wisdom of his cautious procedure became gradually apparent. The expected symptoms manifested themselves tardily, it is true, but with such violence that had the quantity injected been larger her life would have been in imminent danger. In the first case the temperature rose to 40°, and the turbid, serous discharge, and subsequent desiccation of the affected part appeared as in the second; but nothing noteworthy was observed. At 5 P.M. of the 30th the patient's temperature was 39·3°, and she suffered from severe headache and general prostration. The examination of the sputum, repeatedly and carefully made, revealed no tubercular bacilli. Dr. Baccelli decided to refrain from further injections in the two patients till the symptoms evoked by the first had disappeared. To-morrow (1st inst.) he will inject Koch's liquid in two young men suffering from tuberculosis pulmonalis, both of them subjected to a most accurate diagnosis. Meanwhile, the numerous physicians who have left Italy for Berlin have had to wait for a supply of the liquid, all the efforts of Count de Launay, the Italian Ambassador at the Imperial Court, to procure for them a supply of it having failed, to the great disappointment of the Genoese and Neapolitan delegates."

A CORONER ON "SIXPENNY DOCTORS."

MR. SIDNEY SMELT, deputy coroner of Manchester, had occasion lately to refer to sixpenny doctors, and he did not speak of them in complimentary terms. He considered the demand for cheap doctors one of the causes of unqualified practice. He thought it was impossible to get proper time and attendance on such terms, and that those who expected them were very foolish.

FINE UNDER THE NOTIFICATION ACT.

AT the Petty Sessions, at Bardney, Lincolnshire, a tradesman was charged with exposing his son, in the peeling stage of scarlet fever, in a public place—viz., in his own shop. He was fined £5, including costs. We must entirely endorse this judgment. The medical officer of health had taken every pains to explain to the parents the nature of the duties imposed on them by the Act. Notwithstanding repeated warnings, the child was found by the medical officer of health behind the counter of the shop, surrounded by articles of food and clothing for sale. Such recklessness is inexcusable.

FOREIGN UNIVERSITY INTELLIGENCE.

Bordeaux.—Dr. Jolyet has been transferred from the chair of Experimental Medicine to that of Physiology.

Buda Pesth.—Dr. Fewer has qualified as *privat-docent* in Ophthalmology.

Cracow.—Dr. A. Mars has been appointed Professor of Midwifery. Dr. Bock has been invited to take charge of the new Ophthalmic Department.

Lille.—Dr. Wertheimer has been promoted to the chair of Physiology. Dr. Lemoine has been transferred from the chair of Therapeutics to that of Clinical Medicine.

Madrid.—There are five candidates for the chair of Histology, four of them being professors in Spanish provincial medical schools.

Nancy.—The Professorships of Histology and of Materia Medica, including Therapeutics, are officially declared vacant.

Tubingen.—Dr. Dresser has qualified as *privat-docent* in Toxicology.

The Servian Government has decided to convert the High Medical School of Belgrade into a University.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Coccius, Professor of Ophthalmology in Leipsic, at the age of sixty-five. His researches on the physiology of the eye are well known. He was first to examine the retina with polarised light.—Dr. Calmette of Paris.

THE Koch system of treatment in phthisical cases is about to be applied on an extensive scale at Meran in the Austrian Tyrol. A special sanatorium is being provided for the purpose, the physicians retained for the treatment are Drs. Rochelt, Huber, and Fischer, and the nursing department will be entrusted to the Kreuz-Schwestern (Red Cross Sisters). Should a cure be effected, the patient must leave the sanatorium to make room for others, and in this way the clinical reports, it is hoped, will be made to include as large a *catena* of cases as possible.

ON Dec. 11th, at Klausthal, the native place of Dr. Robert Koch, there will be a general celebration of the anniversary of his birthday. On the façade of the house in which he was born a memorial tablet has been placed, and its formal unveiling, preceded by the customary *éloge*, will be among the chief incidents of the day.

PROFESSOR KOCH has been elected honorary fellow of many medical societies on the Continent—e.g., at Vienna, Prague, Buda-Pesth, and elsewhere. The freedom of Wollstein in Posen, where he was in practice, has been bestowed on him, and a tablet is to be affixed to the house he occupied.

PROFESSOR KOCH'S TREATMENT OF TUBERCULOSIS.

(FROM OUR SPECIAL COMMISSIONER.)

ONE of the most valuable additions to our knowledge of the nature and effects of the treatment of tuberculosis by injection with Koch's liquid has appeared from the pen of Dr. O. Israel, who is senior pathological assistant in the Pathological Institute here. At the request of Oberstabsartz[1] Koehler he was commissioned by Professor Virchow to undertake the examination of certain morbid specimens from patients who were operated on by Dr. Koehler after they had been under treatment with Koch's liquid for some time. That Dr. Israel was selected by Professor Virchow as the best man for the work is sufficient guarantee for his superior merits.

The first case reported on by Dr. Israel was that of a man under the care of Dr. Koehler in the Charité Hospital, who had received thirteen injections with Koch's liquid (the last on Nov. 13th ult.). This patient suffered from tubercular disease of the right ankle-joint. As stated by Dr. Koehler in a lecture delivered last week,[2] as the result of observations on this patient, confirmed subsequently by similar observations on others, the extent of the rise in temperature in a patient after injections of Koch's liquid by no means always corresponds to the quantity of Koch's liquid injected For instance, the temperature of this patient rose to 40·2° C. (104·4° F.) after an injection of 0·3 c.cm. of Koch's liquid; but after an interval of treatment lasting thirteen days an injection of 0·6 cc m. only caused a rise to 37·6° C. (99·7° F.). An abscess formed in the right ankle-joint of this patient, which was opened on Nov. 21st by two incisions, one above the external malleolus and one below the internal malleolus. The incision opened two distinct abscesses which were about 8 to 12 mm. beneath the skin, and whose walls consisted of granulations covered with a cheesy deposit. The granulations extended as far as, but not into, the subcutaneous fatty tissue. So far as could be judged by the appearances when the incisions were made, the divided skin and subcutaneous fatty tissue had undergone no noticeable change. But next to the latter was found a layer from 3 to 5 mm., thick, reddish-white in colour, and rather vascular, in which numerous thickened portions, and here and there whitish-coloured vessels, were to be seen. Next to this came a layer, about 1½ to 2 mm. thick, of soft cheesy substance, very opaque, and of yellowish colour. From the cavities of the abscesses there was discharged thin pale-yellow pus, mixed with numerous small masses of cheesy material. Out of some few recesses of the cavities there was discharged, on pressure, some thick, tenacious pus, of a rather deep colour. One of the most remarkable features of the contents of these abscesses was the large pieces of decayed tissue, some of them 2 cm. long and 1 broad, saturated with pus, and very like the necrotic tissue found detached in acute abscesses. But the condition of the parts was quite distinguishable from that of phlegmonous suppuration by its distinct limitation, by the absence of every appearance of hæmorrhage, and also by the fact of the walls of the cavity being covered with a thick, continuous, cheesy deposit. Examination of the pus made on the spot showed that besides fatty and albuminoid detritus, it contained a far greater quantity of pus corpuscles than is usually found in softened tubercular tissue.

A few of the pus cells had undergone fatty degeneration; the majority were distended and of rather large size; the matter coagulated on the addition of acetic acid, and several small nuclei became visible in a large number of the cells. The pus was also rich in mucin. Specimens duly prepared and stained contained a few tubercle bacilli, 1 to 3 in each preparation.

Two questions of the greatest interest present themselves for further investigation. First, in reference to the point raised by Koch himself, as to the disappearance of tubercular tissue which had become necrosed under the influence of injections of his liquid; secondly, as to the extension of the bacilli into tissues not yet necrosed, and apparently tubercular. It has been proved by Baumgarten that in cases of progressive tubercular disease, the mere appearance of bacilli in the tissues of a certain part does not immediately induce proliferation of the tissues, which subsequently ends in necrosis. On the contrary, a certain, though moderate, multiplication of the bacilli *in loco* is a necessary condition for the occurrence of such necrosis. Two supremely interesting questions present themselves to all interested in Koch's method of treating tuberculosis: (1) Are tubercle bacilli to be found in tissues (of tubercular patients) which show no reaction after injection of Koch's liquid? or (2) does reaction occur in all places wherever bacilli are present?

Pretty certain evidence of localised cell proliferation can be had in the case of tissues preserved in alcohol, when they are counter-stained, after the bacilli have first been stained. But it can only be proved with certainty when nuclear fission is distinct.

Cursory examination of a portion of the discharged material showed in the particles of necrotic tissue pure fibrous connective tissue and numerous amorphous cheesy particles containing pus cells; further, here and there, capillary vessels filled with decolourised blood-corpuscles. The wall of the abscess was about 1 cm. thick, and consisted of amorphous, very opaque granular matter, almost entirely soluble in acetic acid. Examination of a section of this wall, by a low power, showed next to the layer just described a second layer, about 0·4 to 0·6 cm. thick, which was much less opaque than the first. Here and there were places which had a cloudy appearance, and there were also many dark points arranged in rows. This layer was separated from the third zone, or that of living granulation tissue, which appeared perfectly translucent, by a defined, irregular margin. The dark points proved to be cells which had undergone fatty metamorphosis, while the light cloudy portions, which readily cleared when treated with acetic acid, consisted of partially necrosed tissue. More minute microscopic examination of portions of the tissue, after hardening &c., showed a distinct zone of cells which had undergone fatty degeneration at the

[1] This is the military title of Dr. Koehler, who is an army surgeon, though at present, according to the excellent arrangements of the Prussian Government, working in the great Charité Hospital. For brevity sake he will be throughout referred to as Dr. Koehler.

[2] This lecture was given last week in brief abstract by our Berlin correspondent. We hope to give a fuller report in our next issue.—ED. L.

margin of the necrotic tissue. In some parts this was fully 0·6 cm. broad. It was particularly dense at the margin of the living tissue.

Examination of the preparations after staining showed in the granulation layer, which was 2 to 3 mm. broad, large well-developed spindle cells, delicately walled vessels, and very few caryokinetic cells. Fresh inter-cellular substance could be seen at many points between the spindle cells. Giant cells were also found scattered in the tissue next the necrotic points, and also a still larger number of Mastzellen. Leucocytes, especially multi-nuclear ones, were visible in moderate number near to the necrotic tissue, and a few actually in it. The necrosed tissue was separated from the living tissue by a very sharp dividing line, the latter being plainly distinguishable by the characteristic complete staining of the cell nuclei. The necrosed tissue nearest this dividing line contained numerous deposits of chromatin, with here and there an uninjured nucleus, but nearer to the internal surface of the abscess no chromatin was to be seen.

Very few tubercle bacilli were to be found in the necrosed tissue, and none at all in the healthy tissue, or in the giant cells of this latter. Both Ziehl's solution of carbol, fuchsin, methylene blue, and also Ehrlich's gentian violet solution in anilin water were employed for staining. Neither process showed tubercle bacilli in the living tissue, although many sections were examined with a view to arriving at a correct conclusion on this point. But tubercle bacilli were only found in the cheesy matter here and there deeply stained, and sometimes broken up. Hence it may be concluded that if tubercle bacilli are present outside the dead tissue, they are exceedingly few in number.

In order to decide whether the bacilli found in the pus and necrosed tissue are still virulent or not, a guinea-pig and rabbit were inoculated with some of the particles of detached tissue found in the contents of the abscess. The rabbit was inoculated in the anterior chamber of the eye. The result of the inoculation cannot, of course, be known for some time.[3]

The second case referred to by Dr. Koehler, that of a man suffering from rheumatic arthritis of the ankle-joint, showed a remarkable contrast to the above case. The patient had received seven injections (the last on Nov. 7th), without showing any local reaction in the ankle-joint, but a distinct local reaction occurred in a cicatrix, some 5 c.c. long, on the right side of the neck. The neighbourhood of this cicatrix became diffusedly reddened as a result of the last reaction, and another small red punctiform cicatrix existed above it. Both cicatrices were excised by Dr. Koehler. Sections of this cicatricial tissue showed it to consist of compact connective tissue, covered with proliferated epithelium, showing leucocytes everywhere, and in some parts great numbers of them. Besides the large spindle cells found in the cutaneous tissues, there were groups of numerous giant cells and some few Mastzellen. But there was no arrangement of epitheloid cells such as is suggestive of tubercle, nor was there any necrosed material. But tubercle bacilli were not found either in the cells or free in the tissue, although only reagents were used which had been proved perfectly active. It is not to be concluded that isolated tubercle bacilli might not exist in some parts of the cicatrix; but from the results of microscopic examination of two different parts of the cicatrix it may be concluded that if there are any, they must be very few in number. In this latter case there was no structural evidence of the existence of tubercle. The great number of giant cells found is remarkable, and their occurrence suggests the earlier existence of tubercle, without at the same time affording necessary proof of it. Further, the infiltration with leucocytes and the minute drop of pus at the bottom of the fistula in the cicatrix must be connected with the reaction which occurred three days previously after the injection of Koch's liquid. From the history of the case, which includes among other facts the extirpation of tuberculous glands, and from the diagnostic effects of Koch's liquid it cannot be doubted that tubercle existed in this case. It may therefore be assumed that as necrosed tissue is removed by the leucocytes observed in the liquid with which the tissues were infiltrated, bacilli may be got rid of in the same way.

[3] Inoculations of guinea-pigs made with sputum of phthisical patients who had been under treatment by Koch's method for some time, and in which very few bacilli were found, and some of these broken up, had positive results in the case of some of Professor Fraentzel's patients.

At the request of Dr. Koehler the scabs formed on the surface of a lupus ulcer in the case of a patient treated by Koch's method were examined bacteriologically. After prolonged searching, tubercle bacilli were discovered, which no doubt had been brought to the surface along with the fluid exuded from the tissues. Observation of the joint, which was distinctly tubercular, seems to point more distinctly to a curative action of Koch's liquid than to the cure of the cicatrix, which only showed a small amount of tubercular deposit.

It is not possible to speak definitely as to the condition of every part of the cavities of the articular abscess from examination of parts of the detached tissues only. In affections of this kind very few tubercle bacilli are usually found; on the other hand, tubercles, especially if of long standing, which show but few bacilli, are usually most distinct in the granulation tissue. But in the case under notice there were neither tubercle nor bacilli in the living tissue, and there were much fewer giant cells than in the other case. It was only in the necrosed tissue that a few bacilli were found, both in the zone of tissue evidently quite freshly necrosed, as in the non-nucleated material, and in the pus from the abscess. There are reasons for doubting that such a double zone of necrotic tissue is of regular occurrence in such cases; but it appears quite legitimate to assume that in the particular case under consideration, the occurrence of these two zones was connected with progressive necrosis, induced by the injection of Koch's liquid.

Von Gossler on Professor Koch's Work past and present.

The Kultus Minister, von Gossler, replying to questions put by Dr. Graf, made a long and important statement in the Landtag on Saturday, in reference to Koch's anti-tubercular liquid. Dr. Graf, in addressing himself to the minister, referred, among other things, to the question of the liquid being supplied in the largest possible quantities, and "in an irreproachable way," to those who required it. He expressed his opinion that the supply of this liquid must not be left a mere matter of trade and speculation, a remark which was received with cheers.

Von Gossler began by referring to the memorable 4th of August when Koch made his communication to the Medical Congress. It would be remembered that Koch had said he possessed several agents capable of acting on the tubercle bacillus in pure cultivations, none of which, however, were applicable to living animals. But he had ultimately found a quite different medium by which he could render animals refractory and check the further growth of tubercle. After this Koch commenced to apply his method to human beings, including himself. He had given himself an enormous dose, sufficient to cause rapid death. Indeed, he had to administer to himself five centigrammes more than the largest quantity given to any patient in the Charité Hospital. Koch had then secured the coöperation of Professor Brieger. Along with him he had applied the remedy to patients in Dr. Levy's private clinic; and, in reply to attacks in the press against this gentleman for making exorbitant charges for the application of Koch's remedy in the case of private patients, he felt bound to say that while Koch was thus working in his clinic he had in every way subordinated his private interests. Subsequently Dr. Cornet, a most distinguished authority on tuberculosis, was interested in the matter, and still later Dr. Dengel. It was impossible to keep the subject perfectly secret during this time, and references were made to it from time to time in the press, the foreign press depreciating Koch's work. On Oct. 20th Koch communicated to his secretary, Geheim-Rath Althoff, that he had discovered a specific against the tubercle bacillus, and wished to retire from the State service, so as to be able to devote himself entirely to further investigations on the subject. On Oct. 24th he (von Gossler) had arranged that Koch might retire from his official work at the Hygienic Institute, Prof. Esmarch being appointed in his stead. With Koch's retirement the whole privacy of the matter disappeared, and its revelation burst over the world like a thunderclap. Professor Koch wished to reveal his secret to him, but he opposed his suggestion, thinking it might do more harm than good. When Koch first communicated with him on the subject, he could assure them that no idea of anything but purely scientific results had ever entered his (Koch's) mind. The question then presented itself to him as to the erection of a hospital

for the treatment of cases by Koch's method, combined with an institution for scientific research. He had offered Koch the Charité Hospital for the purpose, but he had preferred the Moabit Hospital, where there were 150 patients. The University clinic was placed at his disposal for the purpose of scientific research. Koch thought this latter unnecessary, but he (the speaker) wished that Koch's liquid should be presented to the world under circumstances which would exclude all doubt as to its efficacy. The surgical clinic of Professor von Bergmann was selected for the purpose of investigation of the efficacy of the remedy when applied to many, and on Nov. 6th its application was commenced on almost every variety of form of tuberculosis except that of the lung. After further consultations with Professor Koch and the Minister of Finance, it was resolved that it was a question of honour for the State to support Professor Koch. On Nov. 7th he had had a discussion with Koch as to the publication of the nature of the liquid, and Koch expressed his wish to explain it to him before two witnesses. But it seemed that it would be impossible for Koch to do more than merely state the materials employed in the preparation of the liquid. The mode of its preparation was so tedious and involves such care and skill that it would be impossible by a single statement to make the mode of preparation generally intelligible. Koch thought a skilled person might become master of the necessary procedure in six months. The efficacy of the liquid could not be proved by chemical means. After discussing the matter with Koch he (the speaker) took upon himself the responsibility of having begged Koch not to publish his discovery to the world except in such a form as would prevent imitation. He (the speaker) believed that entirely unexpected results would flow from Koch's great discovery. But what raised the discovery of Koch's above the level of all similar ones was the fact that it was immediately applicable to medical practice. It was an exceptional experience that a secret remedy had been accepted throughout the world as *bonâ fide*, and that the mere fact of Robert Koch's name being associated with it sufficed to preclude the idea that it was not a real and valuable discovery.

Koch himself had uttered warnings against overvaluing his discovery, but in vain. No scientific physician could omit the use of this remedy in his treatment of tuberculosis. In Koch's opinion it would be available for general practitioners in two or three years time. It would be necessary to take measures to provide that tubercular cases should be treated in proper hospitals and clinics, and that the present "wild" treatment of patients in hotels and lodging-houses should be put a stop to. It should be borne in mind that there were two great branches of the subject—the anti-tubercular one, and the method as applied to other infectious diseases.

But to whom did this remedy belong? For his part, there could be no hesitation in deciding that it belonged to its gifted discoverer, Robert Koch. He had always adopted that view with regard to discoveries made by teachers in public institutions—e.g., discoverers of aniline colours, oils, &c. He would, therefore, exercise no official influence over its employment. But owing to the extraordinary demands which had arisen for the remedy, he thought it right that the remedy should at first be entrusted to men of standing and repute, first of all in Germany, then abroad. In many of the Berlin hospitals the poor were receiving by far the largest amount of the liquid employed. None of the three persons engaged in the production of the material—Koch, Dr. Libbertz, or Dr. Pfühl—was engaged in private practice. Its preparation took about six weeks. A bottle holding 5 grammes cost 25 marks (25*s.*). Hence 500 injections of 1 centigramme cost 5 pfennigs (½*d.*) each. But the greatest number of injections are only of 1 milligramme, which reduced the price to one-tenth of a halfpenny per injection. Severe criticisms had been made as to exorbitant charges made by private practitioners who were employing the remedy. Dr. Cornet requested him to state that he had never asked or received such fees as were stated in the papers. He charged from 10 to 30 marks (10*s.* to 30*s.*) for each inoculation, and for subsequent treatment 10 to 20 marks (10*s.* to 20*s.*). With regard to the future production and supply of the material: it could not, in the first place, be supplied in large quantities at present. It took six weeks to complete the process of production, and after that it was invariably tested by Professor Koch before it was supplied to anyone. After consultation with Professor Koch, and considering every aspect of the question, he thought the State should take the matter in hand. He hoped the present provisional arrangements would soon develop into an institution where everything would be definite and satisfactory. An administrative department for the issuing of the remedy was no less necessary. That must be done from a central institution, so that everyone might feel certain it was not being worked as a matter of pecuniary profit. When these many arrangements had been made, then would arise the question of extending fully the benefit to other countries. The remedy would be supplied free of cost to all the central medical institutions, so that the poor might derive the full benefit from the discovery. It was most important that a limit be placed on the unregulated extension of private hospitals for tubercular cases, as they might become a source of public danger. This mattter would be referred to the police for regulation. It was proposed to erect two institutions, one a hospital and the other a scientific institution, which would be specially concerned with the application and observation of the remedy and its effects. They would be in connexion with the Charité Hospital. The hospital would, as suggested, consist of wooden and iron buildings, and contain 180 beds for male and female. There was a building already standing at the Charité which would suit Professor Koch for his scientific researches, especially as it consisted mainly of windows—an important factor where microscopic work was a principal feature. Professor Koch would be at the head of the whole, with two assistant directors; neither of these would be engaged in teaching. About half a million marks would be required for this work, which would be provided from extraordinary funds. The buildings would be commenced at once. So much for the State. The city of Berlin would also join in the good work. It had offered Professor Koch a branch hospital of 150 beds, but he was so occupied with the State work that he had to decline this splendid offer. But he had arranged that this hospital should be devoted to soldiers, and he would supply the necessary liquid, and instruction free of charge. Private generosity had also placed at Koch's disposal one million marks, but Koch was obliged to decline the direct employment of that munificent sum. But his suggestions had been adopted, and a sanatorium would be erected, where fifty or sixty patients would be treated gratuitously. Although the land had also been given, the institution would cost over a million. It was to be hoped other private individuals would assist in the good work, and that other towns would follow the example set by the city of Berlin.

DEMONSTRATIONS OF DR. KOCH'S TREATMENT IN LONDON.

THE interest attaching to Koch's treatment has transferred itself for the moment to London, where a series of demonstrations have been submitted to large audiences of medical men from all parts of the country.

Demonstration by Dr. Heron.

Dr. Heron, physician to the City of London Hospital for Diseases of the Chest, gave a lecture (the text of which will be found in another part of THE LANCET) and presented several cases for the observation of his audience. At the outset he stated that all the cases which had been put under treatment were cases of well-defined tuberculosis. No case of phthisis had been treated except where indubitable evidence of the tubercle bacilli had been seen in the sputa.

CASE 1.—The first case (G. M——) presented well-marked signs of phthisis, bacilli being found in the sputum, and crepitations abundant over the upper half of the left. The first injection was made on the morning of Dec. 1st, the quantity injected being 0·002 c.c. The temperature, which was then 98° F., began to rise six hours afterwards; ten hours and a quarter after injection it was 104·7° F. The patient complained of a severe headache, felt very hot, and the skin was dry; the pulse rose from 90 to 148; the respiration increased from 24 to 33. The patient had a slight rigor just before the temperature began to rise, and felt a sensation of nausea once or twice. In eleven hours and a quarter after injection the temperature had fallen from 104·7° F. to 103·6° F. The patient had been per-

spiring freely. He felt much better; headache not so severe and the respiration was quieter (30).

CASE 2.—This case was that of a dock labourer, aged forty, whose father had died of phthisis. Tubercle bacilli were present in considerable quantity, and the patient had suffered from night sweats for three weeks. On Nov. 29th 0·002 cc. was injected. The temperature rose to 103·8° nine hours after the injection; it then fell suddenly to 101·2°. The patient complained of slight chilliness; profuse sweats as the temperature fell, slight frontal headache. Pulse rose from 88 to 102; respiration fell from 28 to 26. After injection the crepitations became less abundant and smaller, and breath sounds weaker; no alteration in the expectoration. On the morning of Dec. 1st a second injection of the same quantity produced in ten hours and a quarter a rise to 101·6°. Except for a feeling of weakness, the patient had not felt any inconvenience from this injection. A third injection of the same strength was made at 10.15 A.M. on Dec. 2nd.

CASE 3.—The case of B. W—— presented many of the signs of phthisis. The voice was hoarse and the cords reddened, a slight nodule being visible on each. The arytenoids were swollen. An injection of 0·002 cc. made on the morning of Dec. 1st had produced no reaction. The patient was reinjected at 10.5 A.M. on Dec. 3rd, the dose used being 0·003 cc.

CASE 4.—The next case was one of lupus of the face occurring in a servant aged twenty-one years. Six years since a pimple above the upper lip was noticed; since then the disease had gradually spread to the nose and cheeks, chiefly to the left. Six weeks ago she had an attack of erysipelas, after which the lupus improved. On Nov. 23rd, twenty-four hours after injection, the temperature reached its maximum of 104° F. This temperature fell by lysis, and only reached the normal three days after injection. The pulse rose to 112 and respiration to 30. The local symptoms were most marked. The whole of the affected portions and for some three-quarters of an inch beyond became swollen, red, and tense. To this there was a well-defined margin, and there was a streak of lymphatics running down towards the right jaw. Twelve hours after injection the submental glands were noticed to be enlarged, and the skin over them red. The lupus patches were defined by a brighter red, and small opaque vesicles appeared, which broke, exuded cloudy serum and dried into amber-coloured crusts. The redness began to subside thirty-six hours after injection; the swelling became less and the scabs thicker. The scabs gradually became detached, leaving healthy granulation tissue, which rapidly healed. There were no rigors or sickness, but the patient complained of much headache and drowsiness. This case had been sent to Dr. Heron by Dr. Radcliffe Crocker, from University College Hospital, and a photograph was taken two hours before the first injection, to show the condition then existing.

CASE 5.—This case was that of a strumous subject with glandular enlargements, and several patches of lupus infiltration on the face and neck. For fourteen years she had attended University College Hospital, and seemed to have improved under the treatment; but the first injection of the fluid showed that there were still many foci of the disease in the enlarged glands. Dr. Heron had hoped to be able to show the case in the condition of blush, but although the full dose (0·01 cc.) had been given, the reaction was not nearly so marked as in the previous case. He was disposed in this case to try what the result of a larger dose would be.

CASE 6.—Dr. Heron then showed a case of long-standing hip-joint disease, complicated with a history of phthisis. On Nov. 26th 0·001 cc. was injected, without producing any definite symptoms. A second injection on Nov. 28th produced no rise of temperature, and no subjective symptoms. The third injection, on Nov. 30th, of 0·005 cc., produced in nine hours a temperature of 100·6°, which rose thirteen hours later to 104·2°; sixteen hours later it had begun to fall. Pulse increased from 72 to 112; respiration from 28 to 40. While the temperature was rising the patient felt sick and cold, and had severe frontal headache. No pain in hip or alteration in scar. The number of bacilli in the sputum had considerably diminished since the treatment was commenced.

CASE 7.—The case of a general servant, whose father, mother, and two uncles had died of phthisis, was next treated. The general symptoms were not marked, but the sputum contained numerous bacilli. After three injections there had been no alteration in the physical signs, except a slight increase in the amount of sputum.

Demonstration by Mr. Watson Cheyne.

At King's College Hospital Mr. Watson Cheyne demonstrated this treatment to a large assembly of medical men in the operating theatre of the hospital, on Wednesday morning at 9.30 A.M. The theatre was crowded in every part, and many of the spectators were present as the representatives of various medical bodies. Mr. Cheyne said that he was one of the fortunate possessors of Dr. Koch's liquid, and he explained how Dr. Heron and he had received the fluid in anticipation of other medical practitioners in this country. The main reason was that he had been for years the personal friend of Dr. Koch, who, in looking about for some person to lay the results of his remedy before the profession in this country, naturally had selected those who had been personally known to him. Dr. Koch's sole desire was to have such arrangements made as would enable as many practitioners as possible to see and watch the cases of certain diseases in the wards of a hospital. At King's College these cases would be seen on Thursday, Friday, Saturday, Monday, and Wednesday morning, and on every succeeding Wednesday at 9.30. As to the results obtained, or hoped to be obtained, from the treatment, he had really nothing to add to what had already appeared in the medical press. In the course of conversation with him, Dr. Koch had expressed the opinion that the remedy would probably be found more valuable in surgery than in medicine. His opinion was that cases of joint disease or gland disease, taken in the early stages, would be cured by this method without any further treatment. Caseous deposits, however, would require to be removed in the more advanced cases. Operative surgery would not be abolished or its field seriously diminished. In very early stages of so-called surgical tuberculosis recovery might take place without the use of the knife, but in older cases—especially those in which caseous deposits had taken place or sequestra formed—operation would certainly be required in the use of the remedy. Speaking for himself, he had unbounded confidence that Dr. Koch would do all that was honourable and right as regards publishing details when that time arrived. The delay in the publication of the nature of the remedy was entirely due to difficulties in the way of producing a constant product. At present various samples were found differing in strength, and perhaps also in composition, and each fresh supply had to be tested before it could be sent out. Professor Koch felt very strongly that if an imperfect method of preparing the remedy were prematurely published numbers of persons would doubtless attempt to manufacture it, with the result that fluid of very various strengths would be obtained. The use of such a fluid might lead to disastrous results and bring discredit upon the whole system of treatment, for there was no doubt that the remedy was a potent, poisonous, and dangerous remedy, the use of which required very great caution. For himself, he had found it useful to adopt a working hypothesis, for which Professor Koch was not in any way responsible. It would most probably require modification at an early date, but still it would be of considerable advantage to those gentlemen who intended to follow the cases if they kept it in mind. We knew that all micro-organisms, especially those which produce local effects, act through the chemical products which they manufacture. This at any rate was certainly the case with the pyogenic organisms. Some years ago he had ventured to put forward the theory that the tubercle bacillus produced irritating bodies during its growth which led to the formation of tubercular tissue, and that, in fact, casation was due to this cause, and not to any failure in the blood supply. Secondly, he assumed that Koch's remedy had a chemical affinity for these chemical products of the tubercle bacillus, and by this combination a still more irritating body was produced which led to the necrosis of the tissues in which the bacilli lie. No reaction occurred in caseous material, and this would be accounted for under this hypothesis by the fact that the bloodvessels conveying the lymph had already been destroyed, and that therefore the remedy could not reach those centres. As regards the dose, he proposed to regulate it mainly by estimating the amount of young tubercular tissue present. The dose would vary inversely with the age of the tubercular tissue. The situation of the tubercular tissue would require also to be taken into account. The remedy produced severe congestion, which might affect the internal organs very dangerously—

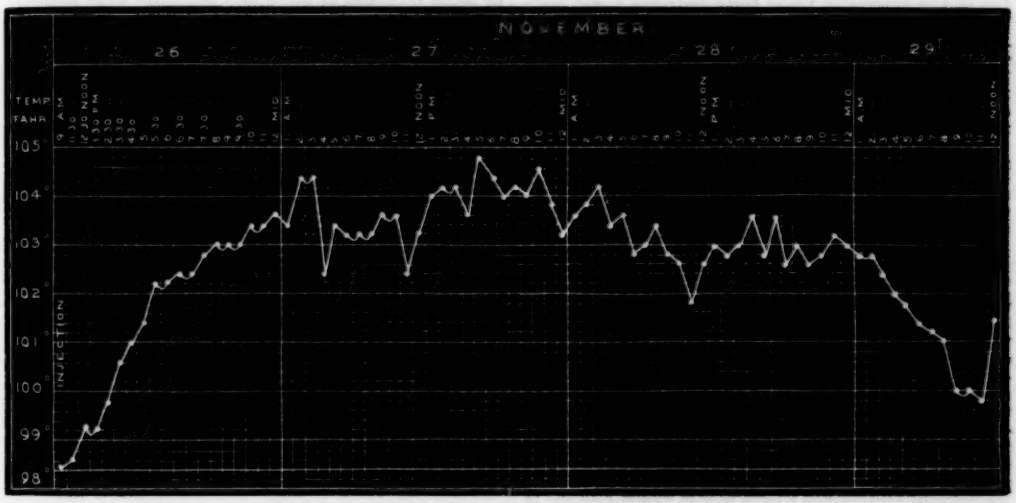
for example, in cases of tubercle of the kidney. In these cases small doses should be given; whereas in lupus or superficial tubercle the danger from congestion need not be feared, although for his part he would be indisposed to use a large dose in lupus of the face, especially in the neighbourhood of the nose. Dr. Koch recommended that in adults with any external tubercle 1 centigramme should be administered, and in children and weakly persons, or in cases of internal tubercle, 2 milligrammes of the diluted fluid were sufficient. The fluid was used in a dilution of 1 per cent., the dilution being made with ¼ per cent. solution of carbolic acid.

Mr. Cheyne then exhibited some cases which had been under treatment by this method. In order to give the medical men present an opportunity of watching the effects of the remedy, he then proceeded to administer it to several cases. The first was a case of lupus. A large patch existed on the thigh, and a similar one at the axilla of the patient. The health of the patient and general condition were described as good, and the full dose was administered.

In a second case the patient was suffering from lupus of the nose and cheek. In this case he gave a smaller dose. The third case presented was one of tubercular disease of the elbow-joint. The patient had been under treatment for six weeks at the Royal Free Hospital, and the pain had not lessened. The measurements were given, and as the patient was only two and a half years of age, only 2 milligrammes were administered. The next case was also a case of disease of the elbow-joint, in a patient of twenty-one years. This patient was said to suffer from night sweats, and had a slight cough. There was no hæmoptysis, and the lung sounds were normal. The case was interesting on account of the complication of the tubercular affection with sepsis. A child aged three, suffering from dactylitis affecting the first phalanx of the ring finger of the left hand, was then submitted to the treatment. The skin was perfectly normal, and Mr. Cheyne expected to see it becoming reddened as a result of the reaction. A case of suppurating glands was next brought in. Mr. Cheyne explained with reference to these that Koch's idea was that it was better not to open the abscesses until after reaction by the remedy had ceased to appear. The masses extended from the angle of the jaw to a point behind the sterno-mastoid and to the crico-thyroid membrane. There was also a mass filling up the posterior triangle of the neck running down behind the sterno-mastoid. Both sides were implicated. A large fluctuating mass occupied the axilla. The general health of the patient was good, and he was injected with a full dose of the fluid. A case of hip joint disease followed, which for several reasons was injected with 3 milligrammes of the fluid, and a case of disease of the tarsus in a younger patient was treated with an injection of 0·002 c.c. The last case was one of tubercle of the iris in a child aged nine years. The eye was very much affected, and looked red and inflamed. The special condition was that it presented considerable circumcorneal congestion, and there were many posterior synechiæ and four small tubercular deposits around the pupillary margin. The patient had a tendency to lordosis, and was of a strumous type. The lungs were healthy.

At the Middlesex hospital, during the week, trials of the remedy have been made by Dr. Douglas Powell on cases in the wards under his care or that of his colleagues. The cases include two of fairly well marked phthisis (one with commencing laryngeal affection), and two of bi-lateral pleurisy, one of which gave a marked reaction and the other none at all. In the latter the tubercular character of the pleurisy was more doubtful than in the former, where there was evidence of slight involvement of one apex. The cases are being carefully observed, but it is manifest that it would be premature at present to enter into further detail respecting them.

The following chart records the temperature for four days of the young woman, aged twenty-four (Case 2), who was inoculated by Mr. Watson Cheyne on Wednesday last, at King's College Hospital (See THE LANCET, *Nov. 29th, p. 1186).*



Dr. Koch's treatment will, we learn, be begun in the Paddington-green Children's Hospital on Tuesday morning next (9th inst.), at 9.30. Medical gentlemen wishing to be present should apply to the Secretary, as admission will be by cards only.

At the moment of going to press we learn that all the cases Mr. Cheyne inoculated on Wednesday morning reacted well. Several of them had high fever, the temperature in three of them ranging over 105°. In the cases of lupus the part is swollen, red, and exuding serum. The diseased bones and joints swelled, and became extremely painful, with more limitation of movement. The patient with enlarged cervical and axillary glands underwent a marked reaction. The cervical glands swelled, and an abscess over one of them burst a few hours after the inoculation. The axillary glands swelled up even more. Mr. Cheyne's first case of lupus was inoculated the second time on Monday last, and reacted very acutely, her temperature reaching 105·2°, and her general condition being very grave. The latest account is that her temperature has fallen considerably, and that her general condition is improved. The local changes were less marked than after the previous inoculation, and the disease appeared to be benefited.

FURTHER RESEARCHES BY PROFESSOR KOCH.

IMPORTANT STATEMENT BY SIR JOSEPH LISTER.

SIR JOSEPH LISTER has returned from a visit of a few days to Berlin, where he has had the opportunity of witnessing the action of Koch's treatment of tuberculosis; and on Wednesday in King's College Hospital he related his impressions regarding it. He spoke of the effects produced by this treatment upon tubercular disease as simply astounding, both in its curative effect and its diagnostic value. He combated the statements which had appeared from time to time in certain publications, to the effect that it was impossible for the dead portions of tissue resulting from the treatment to be got rid of by other than surgical means; he stated that provided these portions of tissue were preserved from septic agency, they need not necessarily be separated from the living body, as they were eliminated by absorption in the same manner as a catgut ligature. There was no reason to suppose that the fact of this tubercular tissue being destroyed would make it incapable of absorption. He compared the action of Koch's fluid with that used by Pasteur in the case of anthrax, an injection of which gave complete immunity from this disease, and he hoped that Koch's future researches would result in showing the remedy capable of acting on human beings so as to give them complete immunity from tuberculosis.

There was another line of research from which he hoped for good results in the direction of immunity. Through the kindness of Professor Koch he had the opportunity of visiting the Hygienic Institute of Berlin, and of seeing most beautiful researches being carried on in that institution, of which he was the inspiring genius. Those researches were now going on, and fresh facts were accumulating day by day. They had not yet been published, and he was not at liberty to mention any details, but there could be no harm in saying that he saw, in the case of two of the most virulent infectious diseases to which man is liable, that the injection under the skin of a small quantity of a material, perfectly constant in character—an inorganic chemical substance as easily obtained as any other article in the materia medica—cut short these two formidable diseases in the animals in which they were performed. These same animals were rendered incapable of taking the disease under the test of the most potent inoculations. He suspected that before many weeks were passed, if it should be found that the same results could be produced on man—though experience of what was known of the different behaviour of Koch's fluid in guinea-pigs and in man makes this a matter of uncertainty until tested by experiment,—the world would be startled by the magnificence of these researches, which would be recognised on every hand.

IMMUNITY AGAINST DIPHTHERIA AND TETANUS.

(BY TELEGRAM FROM OUR SPECIAL COMMISSIONER.)

THE nature of the researches which have lately been going on in the Hygienic Institute of Berlin has given rise to much speculation. Professor Carl Fraenkel has at length published the result of his investigations on diphtheria as a result of experiments on animals. In describing the agent, he says that the not yet chemically defined class of proteid bodies called toxalbumins somewhat resembles, but differs in essential points from, ferments, inasmuch as the quantity of the ferment does not govern the result of its action, whereas the action of toxalbumin is altogether dependent upon the quantity used. He states further, that immunity from diphtheria is secured, first, by the use of attenuated virus prepared by Pasteur's method, and, in the second place, by injecting the bacillary products found in such cases.

The bacillus can be attenuated, but its cultivation cannot be carried to any great length, and it soon recovers in a mysterious manner its former normal virulence. Inoculation with the attenuated bacillus affords a partial protection only, and serves to postpone the fatal issue. But the method of attenuating the bacillus of diphtheria by heating or culture in antiseptic media has produced unsatisfactory results. Experiments with bacilli which have been attenuated by culture in unsuitable media, like agar-agar, have hitherto produced only negative results, and those conducted with dried toxalbumin were also unsatisfactory. Inoculation with the culture fluid which had been heated to 131° F., and filtered through Chamberlain's filter, had the power of rendering the body more resistant to the infection, but did not insure immunity. Animals which were inoculated with one-tenth of a cubic centimetre died in from three to nine days, while control animals died in from thirty to thirty-six hours. Better results were obtained with large and dilute doses than with concentrated ones, which are more dangerous to use. Perfect immunity was obtained by inoculating from 10 cc. to 20 cc. of the bouillon culture, which had been kept for three weeks, and attenuated by heating to a temperature of 149° or 158° F., but the test is a virulent one, and inoculation must be postponed for at least fourteen days. It is also shown that the diphtheritic virus and the protective agent are different substances, inasmuch as immunity is obtained by small injections of the culture products: when injected in large doses there was no evidence of direct infection. At the Institute of Hygiene in Berlin, of which Dr. Koch is head, Dr. Behring and Kitasato have succeeded in curing animals which have been infected with tetanus or diphtheria. Moreover, by inoculations with a perfectly constant fluid of inorganic character they had succeeded in rendering healthy animals refractory to these diseases. They maintain that the immunity thus obtained of rabbits and mice to tetanus is due to an alteration in the active property of blood serum, which has the effect of rendering harmless the toxic, tetanus-producing substances. Their experiments go to prove, in the first place, that the blood of rabbits, which possess immunity from tetanus, will destroy the tetanus virus; secondly, that the property is possessed by shed blood and its serum when freed from corpuscles; thirdly, such blood and serum has the power of acting therapeutically on other animals. Their experiments appear to show conclusively that the blood of those animals which do not possess this immunity from tetanus does not destroy in any way the tetanus virus, and that therefore this virus can be found in animals susceptible to tetanus which have been killed by the disease. They have succeeded in protecting rabbits against living tetanus bacilli, as well as against the tetanus virus. No mouse or rabbit in its natural condition is found refractory to the influence of the tetanus poison.

THE HOSPITAL SUNDAY FUND.

A MEETING of the Council of this Fund was held on the 29th ult. at the Mansion House, under the presidency of the Lord Mayor.

The report was laid "in proof" on the table. For the year there had been collected £42,814, being £1070 3*s.* 10*d.* more than had been raised in any previous year. Of this, £38,823 was received from congregations, while from legacies and special donations £3991 had been received. Notice is taken in the report that from the congregation under the pastoral care of the Rev. Prebendary Forrest the sum of £1258 3*s.* 3*d.* was obtained, being the largest amount ever raised by any one congregation. Awards to 169 institutions were made, which was an increase of eight over last year. After allowing for liabilities and the current expenses, there was left £41,061, and of this £39,101 was recommended to be paid to 113 hospitals and 56 dispensaries. Five per cent.—viz., £2140—was set apart for the purchase of surgical appliances. The Council called special attention to the increase of £551 in the amount collected from congregations over that of the previous year. One anonymous donation of £500 was again reported. There was special attention called to the following sentence in the report: "Gratifying as this improvement undoubtedly is, the Council still feel that the total amount collected must be

much larger, if the hospital managers are to be placed in a position to utilise the large number of beds now empty for want of funds."

Sir S. H. Waterlow, in moving the adoption of the report, congratulated the Council upon the large increase in the receipts upon those of former years; yet they had only received one legacy this year to the amount of £1003. Between the years 1880 and 1890 the total had increased by nearly 40 per cent. (Applause.) With regard to the money allotted for surgical appliances, they found it quite insufficient to meet the largely increasing demands made upon them in that department. There would, therefore, be a necessity for discussing at no distant date whether there should be an increase in the sum voted for that object. The fund, he was glad to say, was worked at a cost of only 3½ per cent.

Sir Owen Roberts seconded the motion, which was carried.

The Ven. Archdeacon Sinclair proposed the addition of certain names to the Council for 1891. He suggested that if the Royal College of Surgeons and nurses made a point of attending the service at St. Paul's Cathedral, they might induce the Bishop of London to select a special preacher for hospitals, and the result would be more satisfactory from a pecuniary point of view.

The resolution was seconded by Mr. Bonsor, M.P., and passed.

It was decided to recommend to the general meeting that Sunday, May 31st, 1891, be fixed for the annual collection.

Mr. H. N. Custance (the secretary) read a letter from the Metropolitan and National Nursing Association, pressing the claims of that body upon a share of the collections. Sir Owen Roberts proposed that so important a request should be referred to the General Purposes Committee for consideration, seconded by Sir S. Waterlow, who remarked that such a request would throw an immense additional responsibility upon the resources of the Fund. The resolution was carried.

The meeting terminated by a vote of thanks to the Lord Mayor for presiding.

We understand that it has been referred to the Committee of Distribution "to confer with the Lord Mayor with the view of calling a meeting of managers of the leading hospitals to consider the possibility of arranging some uniform system of accounts to be presented to their subscribers and laid before the Committee of Distribution." The preliminary meeting will be held on Dec. 8th at the Mansion House for members of the Committee of Distribution only.

THE LONDON HOSPITAL.

ON Wednesday last the quarterly meeting of the governors of this hospital was held, when the report of the House Committee was presented. Mr. J. H. Buxton, treasurer of the hospital, occupied the chair. The report dealt chiefly with the charges which had been made against the London Hospital before the Select Committee of the House of Lords. The allegations were to the effect: (1) That too much power is entrusted to the matron with regard to the dismissal of probationers for inefficiency; (2) that with regard to the private nursing institution, insufficiently trained nurses are withdrawn from the wards and sent out as thoroughly trained nurses; (3) that the nurses' food is insufficient and unsuitable; (4) that the staff is insufficient, that too great responsibility is thrown upon nurses not thoroughly trained, and that there are too many paying probationers; (5) that too much menial work is cast upon the nurses, that the hours are too long, and generally that the nurses are overworked. Each of these charges was denied emphatically. Reference was also made to the case of the girl Nicholls, who had recently complained of having been criminally assaulted at the hospital. It was presumed that the assault had been committed by a student now missing. Every assistance had been given to the police in the matter.

The Chairman, in moving the adoption of the report, said those who were present must acknowledge that their defence to the allegations made against the management of the hospital was singularly complete, and he would also point out that it was the report of a body of men who gave their energies, time, and money to the hospital, and who had had many years' experience in hospital work. The members of the committee always encouraged suggestions, for they were well aware that in a large institution like theirs there must be room for improvement somewhere. But they did not like, when once serious allegations had been met and disproved, that these charges should be renewed as if they had never received denial. If they only knew what the nursing had been ten years before, nothing would be said against the nursing that now existed. The change in that time for the better had been enormous. All round they had received the very warmest expressions of approval from sisters, nurses, and probationers who had gone from the London Hospital to other places. He felt more than anyone else, being treasurer, the vital harm which had been done to that greatest of all East London charities by a few persons—not more than two or three,—harm from which it would not recover for a quarter of a century.

Mr. Cobb seconded the motion.

Mrs. R. Hunter addressed the meeting at considerable length, reiterating the charges made against the hospital nursing arrangements. She was continually interrupted, and was not allowed to complete all she desired to say.

Sir E. H. Currie deplored the fact that the charges should have been made, and further that they should have been made by a governor of only four months' standing, awaking the press, and doing almost incalculable harm. He averred that for some trumpery reason one of the greatest charities in England had been brought into disrepute. The charges touched a lady who had given ten years of her life to the work of the hospital. She was charged with unjustly discharging nurses, whereas, out of 599 nurses who had been in the hospital only eight had been dismissed by her for incompetency. What, too, became of the charge of neglecting the health of the nurses when it had been clearly proved that in ten years, out of 1166 workers in the hospital, only sixteen had died? Sir E. Currie closed his speech with the remark, which was received with great cheering, "that the secret of the charges was that one woman wanted to get her knife into another woman."

Mr. H. G. Yatman proposed and Mr. R. Hunter seconded an amendment to the effect "that this meeting, while adopting the report of the House Committee, earnestly trusts that the committee will take steps for improving the nursing arrangements of the hospital." Mr. Yatman vainly attempted to address the meeting, standing for some time amidst uproar and cries of "Divide!" The amendment having been lost, the report was unanimously adopted.

Mr. J. Hall stated that he had been interested in the hospital for years, and proceeded to make further remarks amidst great interruption.

After electing the officers for the ensuing year, the meeting separated.

DENTAL HOSPITAL OF LONDON.

THE annual dinner of the past and present students of the Dental Hospital of London was held on Nov. 29th at the Holborn Restaurant, Dr. Joseph Walker presiding. In proposing the toast of the evening he remarked that there was no portal through which to enter the dental profession except the L.D.S. The small number of sixteen dental surgeons had the power of admitting or refusing candidates. The General Medical Council had the power of keeping up the standard of the examination, and he hoped they would continue to do so. He was glad to say that the number of students was increasing. The flourishing condition of the school was largely due to the teaching of the staff. He hoped shortly to see operations going on all day long instead of only in the morning. Dr. Samuel Wilks said that he had always had a great objection to specialism, but dentistry had been longer and more differentiated than other specialties. Formerly if anything was the matter with a tooth it simply meant pulling it out; now dentists went in for conservative dentistry, and, further, this was within the reach of the poorer classes, thanks to the Dental Hospitals. Mr. Sibley remarked that the Dental Hospital was healthy and robust, and doing good work, but was capable of doing very much more. Before the Dental Hospital was founded, authorities were consulted in order to enable general hospitals to establish dental departments where conservative treatment might be carried out; but this being found impracticable, the special hospitals

received the support of the general hospitals. He was glad to say that they had recently made a new departure—viz., the supply of artificial teeth to the necessitous poor. Mr. Morton Smale said that one thing he particularly wished to insist upon was that the licence in Dental Surgery was the only criterion of a person's fitness to attend to the teeth. With reference to the proposed dental representative on the Medical Council he thought that he ought certainly to be on the Medical as well as the Dental Register, and he hoped that should one be elected he would not take up more of the Council's time with dental business than was necessary, as it was a very expensive process. Messrs. Maggs, F. Canton, Dr. W. J. Collins, David Hepburn, and others made appropriate speeches, and there was some good music.

GLASGOW UNIVERSITY CLUB, LONDON.

THE usual winter dinner of this club was held on the 26th ult., in the Holborn Restaurant. Professor Sir George Macleod occupied the chair, and among those present were the Solicitor-General for Scotland, Mr. H. Craik, C.B., Professor Struthers, Dr. M'Intyre (the donor of the Students' Union), Mr. James Alexander Campbell, M.P., Sir William Mac Cormac, and Professor John M. Thomson. After the toast of "The Queen" had been duly proposed and honoured, the chairman proposed "The Glasgow University Club, London," remarking that it did good work in promoting fellowship between Glasgow University and its graduates. Sir Charles Pearson, M.P., then proposed "Our Alma Mater," a toast which was drunk with enthusiasm, and which was responded to by Professor Sir G. H. B. Macleod. Professor Struthers of Aberdeen, in a humorous speech, proposed "The Houses of Parliament," which toast was responded to by Mr. J. A. Campbell. The remaining toasts were "The Guests," proposed by Mr. Craik, and replied to by Dr. M'Intyre, who related the circumstances which led to his idea of founding the union for the students; and "The Chairman," proposed by Sir William Mac Cormac.

For the information of those of our readers who are connected with Glasgow University, and may desire to join the club, we may mention that the hon. secretaries are Dr. G. A. Heron, F.R.C.P., 57, Harley-street, W., and Mr. J. R. McIlraith, M.A., LL.B., Barrister-at-Law, 4, Harcourt-buildings, Temple, E.C.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE autumn general meeting of the above Association was held at 11, Chandos-street, on the 25th ult. In the absence of the President, Dr. George H. Kidd, who was detained in Dublin, the chair was occupied by Sir Thomas Crawford, K.C.B. (ex-president). There was a large attendance of members, including Sir W. Mac Cormac, Dr. H. M. Jones, and Dr. R. Fegan (ex-presidents), Dr. Gilbart-Smith (President-elect), and the honorary secretaries, Mr. Stewart, Mr. Ffolliott, and Dr. Cagney.

The Honorary Provincial Secretary reported that in consequence of the action of the Association last July the committee of the Bristol General Hospital had summoned a special board of governors for the following day to repeal the rule by which diplomates of the two Royal Colleges in Ireland had hitherto been excluded from competing for honorary staff appointments. The announcement was received with evident satisfaction by the members present. It was determined to make a fresh appeal for subscriptions to the special fund established to meet the expenses connected with the agitation against such exclusiveness elsewhere, the Chairman remarking that he hoped they would be enabled to attack the strongholds of monopoly in other places with success as great as they had in Bristol.

The Council was authorised to take what action it might deem advisable in reference to the Midwives Registration Bill when again introduced into Parliament.

On the motion of the Chairman, seconded by Dr. Gilbart-Smith, it was resolved unanimously to enter on the records an expression of the great loss the Association had sustained by the death of Dr. Edward Waters of Chester.

The members now on the roll was reported to be 640.

The members and their friends dined together the same evening at the Holborn Restaurant. Sir Wm. Mac Cormac (Vice-President) occupied the chair. The President of the Royal College of Surgeons in Ireland, replying to the toast of "The Guests," congratulated the Association on the victory they had obtained in Bristol—a victory which his College had been glad to help them to secure. He defied anyone to say that the diplomates of his College were in any way inferior to those holding London qualifications. The success of many of his own old pupils when they came to England—examples of which might be quoted from those he saw round him—proved the contrary. Professor Macnamara, in proposing the toast of the evening, said that an Association which kept alive in England the *esprit de corps* so conspicuous among the pupils of Irish medical schools was one that was sure to succeed, and he cordially wished it the greatest prosperity. "The Health of the Medical Officers of the Army and Navy" was proposed by Dr. Mapother, and responded to by Sir Thomas Crawford. The proceedings were enlivened by songs and recitations by Mr. Nicholls, Mr. Brenon, Mr. Arthur Oswald, and Dr. Gilbart-Smith.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 4656 births and 3532 deaths were registered during the week ending Nov. 29th. The annual rate of mortality in these towns, which had increased in the preceding three weeks from 20·8 to 21·3 per 1000, declined again to 19·0 last week. The rate was 18·0 in London and 19·7 in the twenty-seven provincial towns. During the past nine weeks of the current quarter the death-rate in the twenty-eight towns averaged 20·5 per 1000, and slightly exceeded the mean rate in the corresponding periods of the ten years 1880–89. The lowest rates in these towns last week were 15·0 in Derby, 15·5 in Salford, 15·9 in Bristol, and 16·5 in Bradford; the highest rates were 22·4 in Oldham, 24·5 in Plymouth, 26·8 in Preston, and 30·2 in Manchester. The deaths referred to the principal zymotic diseases, which had been 471 and 481 in the preceding two weeks, declined last week to 428; they included 172 from measles, 64 from scarlet fever, 58 from diphtheria, 51 from diarrhœa, 42 from whooping-cough, 41 from "fever" (principally enteric), and not one from small-pox. The lowest death-rates from these diseases were recorded in Huddersfield, Derby, Wolverhampton, and Portsmouth; the highest in Birkenhead, Bolton, Manchester, and Preston. The greatest mortality from measles occurred in Sheffield, Manchester, Bolton, Oldham, Preston, and Birkenhead; from scarlet fever in Salford and Sheffield; from whooping-cough in Leicester and Preston; and from "fever" in Newcastle-on-Tyne and Plymouth. The 58 deaths from diphtheria included 48 in London and 2 in Sheffield. No death from small-pox was registered in any of the twenty-eight towns; and no small-pox patients were under treatment in the Metropolitan Asylum Hospitals or in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of last week was 2000, against numbers declining from 2122 to 2059 on the preceding three Saturdays; the patients admitted during the week were 132, against 186 and 205 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 465 and 459 in the preceding two weeks, further declined to 375 last week, and were 61 below the corrected average. The causes of 87, or 2·5 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Norwich, Bristol, Wolverhampton, Sunderland, and in three other smaller towns. The largest proportions of uncertified deaths were recorded in Sheffield, Hull, Salford, Liverpool, and Blackburn.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased in the preceding three weeks from 20·7 to 23·2 per 1000, further rose to 24·4 during the week ending Nov. 29th. During the first nine weeks of the current quarter the death-rate in the city averaged 22·3 per 1000, the rate for the same period being 19·4 in London and 17·8 in Edinburgh. The 165 deaths in Dublin showed an increase of 8 upon the number in the preceding week, and included 11 which resulted from different forms of "fever," 3 from whooping-cough, 3 from diarrhœa, and not one either from small-pox, measles, scarlet fever, or diphtheria. Thus the deaths referred to the principal zymotic diseases, which had been 6 and 14 in the previous two weeks, further rose last week to 17; they were equal to an annual rate of 2·5 per 1000, the rate from the same diseases being 2·3 in London and 1·9 in Edinburgh. The fatal cases of "fever," which had been 2 and 5 in the preceding two weeks, further rose last week to 11, a higher number than has been recorded in any week since December last. The deaths referred to whooping-cough, which had been 1 and 4 in the previous two weeks, declined to 3 last week. The 165 deaths in the city included 22 of infants under one year of age, and 40 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons showed a further decline from recent weekly numbers. Five inquest cases and 5 deaths from violence were registered; and 51, or nearly a third, of the deaths occurred in public institutions. The causes of 21, or nearly 13 per cent., of the deaths in the city were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.—Surgeon-Major John Findlay, M.B., C.I.E., retires from the Service, receiving a gratuity (dated Dec. 3rd, 1890).

ARMY MEDICAL RESERVE OF OFFICERS.—Surgeon Richard Marsden Pilkington Low, M.B., to be Surgeon-Major, ranking as Major (dated Dec. 3rd, 1890).

NAVAL MEDICAL SERVICE.—The Greenwich Hospital pension of £80 a year for deputy inspectors-general of hospitals and fleets, rendered vacant by the death of Deputy Inspector-General M'Cormick, has been awarded to Inspector-General Charles M'Shane.—The following appointments have been made at the Admiralty:—Fleet Surgeon John S. Dobbyn, M.D., to the *Indus* (dated Dec. 2nd, 1890. Fleet Surgeon Garland W. Langdon Harrison has been promoted to the rank of Deputy Inspector-General of Hospitals and Fleets in Her Majesty's Fleet (dated Nov. 26th, 1890). Staff Surgeon Edward H. Williams to the *Hyacinth* (dated Nov. 29th, 1890). Surgeons: Frederick J. Lilley to the *Impregnable*, and Alfred J. Pickthorn to Plymouth Hospital (both dated Nov. 28th, 1890); Mr. Francis T. Gage, M.B., to be Surgeon and Agent at the Scilly Islands (dated Nov. 26th, 1890); Thomas Austen to the *Seagull* (dated Dec. 1st, 1890); Edmund Corcoran to the *Asia*, and John Hunter to the *Mohawk* (both dated Dec. 16th, 1890). In accordance with the provisions of Her Majesty's Order in Council of April 1st, 1881, Inspector-General of Hospitals and Fleets Michael Waistell Cowan, M.D., has been placed on the Retired List at his own request (dated Nov. 25th, 1890).

VOLUNTEER CORPS.—*Royal Engineers:* 1st Middlesex: Acting Surgeon G. B. Courtney, M.B., resigns his appointment (dated Nov. 29th, 1890).—*Rifle:* 1st Volunteer Battalion, the Norfolk Regiment: Acting Surgeon C. J. Watson resigns his appointment (dated Nov. 29th, 1890).—2nd (Prince of Wales's) Volunteer Battalion, the Devonshire Regiment: Surgeon and Surgeon-Major J. H. S. May, (ranking as Lieutenant-Colonel) resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the Battalion on his retirement (dated Nov. 29th, 1890).—1st Volunteer Battalion, the Duke of Wellington's (West Riding Regiment): Edgar Duesbury Wellburn, Gent., to be Acting Surgeon (dated Nov. 29th, 1890).—4th Middlesex (West London): Acting Surgeon R. Lake resigns his appointment (dated Nov. 29th, 1890).

VOLUNTEER MEDICAL STAFF CORPS.—The Edinburgh Division: Surgeon C. W. Cathcart, M.B., resigns his commission (dated Nov. 29th, 1890).

Correspondence.

"Audi alteram partem.

"PROFESSOR KOCH'S REMEDY FOR TUBERCULOSIS."

To the Editors of THE LANCET.

SIRS,—In offering you a few brief notes relating to the treatment of tubercular disease after Professor Koch's method I will not attempt to repeat what has been so well recorded as to the typical, constitutional, and local effects which follow the injection of the medium which has recently added so much to his fame. It may, however, be of interest to state that where the initial dose is limited to 0·001 or 0·002 of a cubic centimetre, and the increase to 0·01 or more is made by three or four advancing steps, rigors and vomiting have generally been avoided, although in one such case which came under my notice a brief access of delirium occurred while the fever was at its height. I have not learned that in any cases in which the precautions I have specified were taken has collapse or even stupor supervened. The maximum temperature has not been maintained for more than two hours at the outside, and in nearly all instances fever and general discomfort have subsided in a little more than twelve hours from the time at which the injection was given, while the increased pain which supervenes in affected joints has not endured much longer. The almost universal testimony of patients is that the subsidence of the reaction is immediately followed by an improvement as regards local symptoms, a better appetite, and an enhanced feeling of general well-being. In pulmonary disease this observation applies (with, however, diminishing force) to the following classes of cases: Those in which night sweats, dulness on percussion, and diminished lung aëration have been observed; those in which marked crepitus is accompanied by bacillus-infected sputum; and those in which well-marked cavitation has occurred. In none of these—in so far as I have observed, and have been able to ascertain—have signs of sepsis followed the treatment. How far this result may be consistent with the theory that the Koch treatment is followed by the immediate necrosis or even gangrene of tuberculous tissue I leave to others to decide. It seems to follow, however, from what I have stated, that such doses of the medium as are calculated to promote rigors and vomiting are not necessary to ensure success. Having enjoyed the advantage of seeing a number of cases at the height of the febrile reaction, I may add that I found that, in spite of considerable constitutional disturbance and distress, the intellect was clear, and the tongue moist and free from excess of fur; the skin was mostly dry, and in all cases the pulse exhibited a very marked loss of tension, even when it was not very materially accelerated. At first laryngeal cases were undertaken under a great fear of possibly ensuing interference with respiration, and tracheotomy instruments were kept ready for use at a moment's notice; but experience has dispelled the apprehension, and the prospect of surgical interference is scarcely entertained. It cannot, however, be altogether excluded, if I am correctly informed that on Wednesday last it was required by a patient at the Charité while at the height of the reaction. I have not met with a single instance in which irritation has ensued at the seat of hypodermic injection, and, in this connexion, it may be worth noting that Professor Ewald uses a syringe of the ordinary pattern, of which the piston is made of compressed asbestos, a material which admits of easy sterilisation by means of absolute alcohol.

I shall be glad to take this opportunity of expressing the feeling of gratitude which, in common with so many other visitors to this city, I entertain towards the distinguished physicians and surgeons who are engaged in the investigation and practice of Professor Koch's system of treatment. We have added enormously to their labours, made great demands on their patience, and received in return the most signal courtesy and kindness. I have taken some pains to learn whether any manifestation of this feeling would be agreeable to these gentlemen, and have reason to believe that it would. May I suggest that it should be made in

some appropriate manner, and be accompanied by a substantial contribution to the funds of Professor Koch's Institute of Pathological Investigation?

I am, Sirs, yours faithfully,

Berlin, Nov. 29th, 1890. W. BEZLY THORNE.

To the Editors of THE LANCET.

SIRS,—Adverting to Dr. Strahan's letter which appears in THE LANCET of Nov. 29th, and in the second paragraph thereof, the views expressed regarding the etiology of tuberculosis are so closely allied to the principles on the same subject advanced many years ago by leading Continental pathologists, that I trust I may be pardoned for drawing attention to the fact. At the same time, I am quite aware that men often arrive at similar conclusions, even though it may be at different times. In support of such fact I may say that I remember, when some years ago being called upon to review a medical work, I was about to give expression to such views as are now embodied in Dr. Strahan's letter, but upon looking up authorities I then became aware that such views might fairly be considered pathological axioms, in which case I referred to such leading authorities in the following manner:—

"..... but we do assign the two causes which we have mentioned—i.e., insanitary influences and the abuse of alcohol—as the chief factors in preparing a fertile ground for all forms of phthisis pulmonalis. This '*misère physiologique*' of Bouchardat links us very closely with the theory of Virchow, Koch, and others, that the germ of phthisis is not inherited as that of syphilis may be, but that a certain condition is which but waits, as we assert such noxious influences as are herein cited to have phthisis aroused in all its forms. We do not consider that this view limits us to the idea of spontaneity in the origin of such organism, for is it not possible, and even permissible, to imagine that, amidst the hosts of pathogenic germs arising from insanitation, some form which can find no fertile ground in the lungs of the healthy may in the effete lung tissue of the miserable find a soil and pabulum, wherein, through some metamorphosis, it becomes revealable subsequently as the tubercle bacillus?" The theory of Professor Bouchardat regarding "physiological misery," though not acceptable in its entirety as the origin of the bacillus in question, is, through the influence of later lights, shaking off a good deal of the adverse criticism that was bestowed upon it, owing to its collateral deductions, and is now being accepted each day more surely as a fundamental basis in disease etiology, and is in the fullest sense as acceptable as it is justly extensive in such application.

I am, Sirs, yours obediently,

Dublin, Dec. 1st, 1890. C. E. MACNAMARA.

MYTABRIS FULGURITA AND HYDROPHOBIA IN EGYPT.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Nov. 22nd, your Egypt correspondent, speaking of cases of hydrophobia in Cairo, said that "one of the arguments in favour of hydrophobia existing occasionally in Egypt is that the natives have a remedy for it dating from the old Arab physicians." And he adds that: "It is a beetle of the cantharides family, which causes the patient to urinate and evacuate blood. . ." It may be of interest, perhaps, to some of your readers to know that it was after an inquiry made by me in 1876, when I was chief medical officer of health at Lagazoz, that it was ascertained that an insect was used among the Bedouins of the environs of Ismailia as a preservative against and a remedy for hydrophobia; that this insect belongs to the genus Mytabris, and it was determined, on my request, by the kindness of Professor Adolfo Targioni Tozzetti of Florence, as Mytabris fulgurita reiche; that this insect produces a sort of cystitis, which causes the emission of some sanguineous and fibrinous clots; and lastly, that the use of this substance is a proof that hydrophobia has for a long time been known in Egypt.

I have given a full account of my inquiry in a letter to Professor Targioni, and published by him in the *Bullettino Entomologica*, anno viii., 1876.

I am, Sirs, yours faithfully,

Pisa, Italy, Nov. 29th, 1890. P. SONSINO.

FEES FOR MEDICAL ATTENDANCE ON THE POLICE.

To the Editors of THE LANCET.

SIRS,—A meeting of the medical attendants on the police in the county of Kent was held on Friday, Nov. 28th, at Ashford, Dr. George Wilks in the chair. It was resolved unanimously: 1. "That the medical men here present, representing the medical practitioners of Kent who were in the habit of attending the police, do enter their earnest protest against the scale of fees recently propounded by the Standing Joint Committee of Kent. 2. That they consider the scale of fees in use in East Sussex the most satisfactory form of remuneration for attendance on police in Kent—viz., advice and medicine at residence of medical gentleman, a fee of 2*s.* 6*d.*; visit, advice, and medicine within an area of one mile from residence, a fee of 3*s.* 6*d.*; the sum of 1*s.* to be allowed for each additional mile. Fees to be doubled for medical attendance in the night—viz., from 10 P.M. to 7 A.M.; 1*s.* to be allowed for each certificate. Special cases, such as fractures, dislocations, injuries, and operations, to be charged for as in ordinary practice. No additional charge to be made for medicine. Note, mileage can only be charged one way. The allowance of double fees at night does not include mileage. 3. That a deputation of three be elected to represent to the Standing Joint Committee the views of this meeting of the practitioners of Kent, and to ask the committee to adopt the code of East Sussex. 4. That the following gentlemen form the deputation: Mr. Thurston, Ashford; Dr. Allan, Tonbridge; Dr. Hoar, Maidstone. The meeting hopes that any memorials which are being signed may be forwarded without delay to one of the members of the deputation for presentation.

The above are the minutes of the meeting of which I sent you notice last week, and of the result of which I promised to inform you.—I am, Sirs, yours faithfully,

Maidstone, Nov. 29th, 1890. CHARLES E. HOAR.

THE ROYAL COLLEGE OF SURGEONS AND THE UNIVERSITY OF LONDON.

To the Editors of THE LANCET.

SIRS,—It has come to my knowledge that the Council of the College of Surgeons is now making final negotiations with the Senate of the University of London concerning the proposal to grant a degree under circumstances which cannot but prove prejudicial to the interests of all concerned, except the Board of Examiners and Council of the College of Surgeons. It seems to me that the Council of the Association of Fellows of the College ought to be at once summoned to present a remonstrance to both bodies against the conclusion of negotiations till the voice of the Fellows of the College has been heard. I very strongly urge that immediate and strong steps be taken.

I am, Sirs, yours faithfully,

Dec. 3rd, 1890. LAWSON TAIT.

"LANCING 'ASLEEP.'"

To the Editors of THE LANCET.

SIRS,—My attention has been called to an article in your issue of Nov. 29th, headed "Lancing 'Asleep,'" and as people who are not acquainted with the locality may think that there is a connexion between Lancing College and the grammar school referred to in the paragraph, by which the reputation of this college may suffer, will you oblige me by inserting in your next issue the following:—That Lancing College is situated on a chalk hill some 160 ft. above the sea, that it is two miles from Lancing-by-the-Sea, and that the college has a drainage system of its own independent of the neighbourhood.

The whole of the college drainage system is periodically visited by the medical officer of health, Dr. Kelly, and in September last he certified that he found all the sanitary arrangements in a very satisfactory condition. The buildings which were a grammar school at Lancing-by-the-Sea were wholly unconnected with Lancing College.

I am, Sirs, yours very faithfully,

HARRY W. MCKENZIE, Head Master.

Lancing College, Shoreham, Sussex, Dec. 2nd, 1890.

THE STRUTHERS TESTIMONIAL.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me in your next issue to call the attention of old pupils and friends of Professor John Struthers to the fact that the list of subscriptions towards the testimonial will very soon be closed? I send you herewith a list of those who have already subscribed, and shall be obliged if you will give it publicity.[1]

A general meeting of subscribers will be held at 16, Cavendish-square, W., the residence of Sir Andrew Clark, Bart., chairman of the committee, on Saturday, Dec. 20th, at 8 30 P.M., of which due notice will be sent. At this meeting will be decided the form that the testimonial will take, and I shall be glad to receive any further subscriptions.

I am, Sirs, yours faithfully,

JAMES ANDERSON,

41, Wimpole-street, W., Dec. 2nd, 1890. Treasurer and Secretary.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Mayor and the Hospitals.

FOR some years past it has been customary for the newly elected Mayor to visit the Infirmary for Children on the Sunday after his election. It has also been the practice for him to attend the morning service at St. Barnabas' Church for many years past on the second Sunday of his year of office, when a sermon is preached and a collection made on behalf of the Royal Southern Hospital, which is near the church, and which the Mayor and those who are with him visit after the service. Both these customs have been duly observed this year by the newly elected Mayor (Major Morgan). Canon Diggle, who preached the sermon on behalf of the Royal Southern Hospital, happily observed that in its work it was divine as well as royal. He also remarked upon how little was done by persons under forty years of age on behalf of charitable institutions, and urged the cultivation of habits of self-denial upon young men, so that they might be enabled to do at least something towards the support of hospitals.

The New Infirmary.

Patients have been admitted into the new infirmary which was recently opened under such favourable auspices, but at present only a proportion of the beds are occupied, time being required to complete all the necessary arrangements before they can all be fully utilised. The contrast between the new and the old infirmary to those who have had to work in each is most striking. The accommodation for the resident staff, which in the old infirmary was most inadequate, is now ample, and all the facilities available for dressers and clinical clerks leave little to be desired. The new infirmary is a most valuable adjunct to the School of Medicine, which is only separated from it by a narrow street, limited to those pedestrians who come to the school or to the infirmary.

Hospital Sunday and Saturday.

The annual meeting of the supporters of Hospital Sunday and Saturday has shown a steady increase of late years. The amount awarded to the hospitals and dispensaries last year was little short of £10,000, the largest since 1874. Jan. 11th, 1891, will be the twenty-first anniversary here of Hospital Sunday, which will thus complete its majority in Liverpool. The first was held on Jan. 8th, 1871. So large is the work in connexion with these institutions that a permanent office will now be required, though the meetings will probably continue to be held at the Town Hall, the existing Mayor having always been the President of the Committee.

The Forthcoming Assizes.

The assizes for South-west Lancashire commence here to-morrow. Mr. Justice Cave will preside in the Crown Court, and the calendar is an unusually heavy one. Among other cases to be tried is what is known as the Bolton murder, in which the victim was a schoolmistress, and her body was not found for some days after that on which her death had taken place. This and other circumstances have invested the case with considerable interest, not only in the neighbourhood of Bolton, but in the county. There are other cases of alleged murder and manslaughter, and others of more or less medico-legal interest.

Dec. 3rd.

[1] The list will be found in our advertising columns, p. 65.—ED. L.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Newcastle Infirmary and Dr. Koch's Treatment.

THE honorary staff of the Newcastle Infirmary have announced to the profession of the district that arrangements are being made for the employment of the lymph which has been placed at their disposal by Mr. J. V. W. Rutherford of this city for suitable and selected cases, and members of the profession will receive cards should they desire to witness the treatment on writing to the hon. house physician. No doubt the invitation of the staff will be largely responded to.

The Vacant Coronership of North Northumberland.

It is stated that under the Local Government Act it will devolve upon the County Council of Northumberland to appoint a coroner for the northern division of the county, in succession to the late Mr. G. E. Watson, in pursuance to a writ *de coronatore eligendo* to be issued by the Lord Chancellor, should the writ reach the clerk of the Council in time for the special meeting, which the chairman proposes to summon for Thursday, the 18th inst. I have not heard of any medical candidate being in the field. The election will be a far more simple process than when the freeholders had to be canvassed for their votes.

Arcana Fairfaxiana; or "Ye Apothecarie: his Booke."

It is expected that this very interesting antiquarian publication will be ready by Dec. 20th. The introduction by its editor, Mr. Geo. Weddell, will contain a history of the book from the time of Elizabeth to George III., and some interesting information has been gained showing how it passed out of the hands of the Fairfaxes into the possession of a distinguished family in the county of Durham. The entire volume is being reproduced in facsimile of the original handwriting, and as there will be no reissue, the original impressions are being destroyed as the book proceeds. Amongst the subscribers are many of the foreign Universities and State libraries.

Mr. Jeaffreson is about to commence a series of demonstrations at the Eye Infirmary, Newcastle. The course will be free to practitioners and students, and will utilise for their benefit the large amount of clinical cases afforded in the practice of the institution.

It is stated that the late Mr. George Angus, of Low Gosforth Hall, bequeathed by his will a considerable amount to local and other charities, including £150 to the Gateshead Children's Hospital, £150 to the Gateshead Dispensary, and £100 to the Newcastle-on-Tyne Dispensary and Newcastle Infirmary.

Newcastle-on-Tyne, Dec. 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Health of Edinburgh in October.

DURING October 401 deaths were registered in Edinburgh, being 17·74 per 1000, an increase of 1·77 on the average for the same month during the last five years. To this number diseases of the chest contributed 109 cases, or 27·18 per cent. of the whole mortality; zymotic diseases 37 cases, or 9·22 per cent. of the whole. The cases of infectious disease reported were 282, including 99 of scarlatina, 79 of typhoid fever, 54 of diphtheria, and 50 cases of measles. The births registered were 569—280 males and 289 females.

Public Baths in Edinburgh.

A motion for the erection of additional public baths, to meet the increasing demand for them, was considered on Thursday by the Plans and Works Committee of the Town Council. Statistics were given showing that the number of persons taking advantage of the plunge baths had doubled within the last three years. The motion recommended

that additional baths should be erected in such thickly populated districts as Fountainbridge and Dalry; and the committee, recognising the healthful influence that increased bathing facilities must exert, agreed to recommend the Council to take steps in the direction indicated.

Edinburgh Medical Missionary Society.

The annual meeting of this Society was held on Nov. 28th, Professor Simpson being in the chair. The report of the fiftieth year of the Society's existence showed a satisfactory state of things, both as regards income and work done. Last year's general income amounted to £4845, and was the largest on record; while the total income during the decade 1881–90 was £60,870, more than double that of the preceding decade. The total expenditure during the past year was £21 in excess of the income. The Secretary gave an account of work done abroad and in the city slums, which latter should commend the Society to the increased liberality of the public, who, while interested in "Darkest Africa," should remember there is a "Darkest Cowgate."

The Edinburgh Health Society Lectures.

On Saturday last Dr. J. W. Ballantyne was the lecturer, and discoursed on "Common Errors in the Rearing of Children." He discussed these errors under the heads of diet, general hygiene, including dress, cleanliness, exercise, and housing, and mental and moral education.

Professor Gairdner on Koch.

A considerable part of Professor Gairdner's lecture to his class of Practice of Medicine at Glasgow on the 24th ult. was devoted to a discussion of the new curative discovery of Prof. Koch. In the course of his remarks, he said it was not surprising that an announcement bearing on the treatment of so enormous an evil as tubercular disease should excite the most intense and widespread interest, and give rise to expectations which might easily be doomed to disappointment. Looking to Dr. Robert Koch's previous record, and to his researches on this very subject in the discovery of the bacillus tuberculosis, Dr. Gairdner said that everything Koch had hitherto promulgated in connexion with the pathology of tubercle had been characterised by a quite admirable patience, accuracy, and inventive genius. He (Professor Gairdner) had studied Koch's paper over and over again, and there appeared enough evidence to justify the statement that the essential part of the cure consisted in so modifying the tissue elements in which the disease prevailed as to render them incapable of becoming or of remaining a soil for the bacillus of tubercle. There was nothing in Koch's methods that opposed itself to any other rational treatment, although, if the promise of this remarkable paper be only half fulfilled, it would supersede, as regards the early stages of phthisis at least, a great deal of the tentative, and therefore largely ineffective, medicinal treatment at present employed, while still permitting of all aids to the treatment founded on clear and well-established physiological principles.

Royal Medical Society, Edinburgh.

The following are the office-bearers for the present session:—Presidents: R. D. Rudolf, M.B., C.M., senior P. B. Haig, M.B., C.M.; R. D. Clarkson, M.B., C.M., B.Sc.; Alexander Miles, M.B., C.M. Secretaries: A. C. E. Gray, M.B., C.M., and R. J. A. Berry, L.R.C.P., and S.E. Chairman of Finance: L. N. S. Carmichael. Curator of Library: G. D. Sutherland. Curator of Museum: A. B. Giles, M.B., C.M. Editor of Transactions: Alexander Miles, M.B., C.M.

"Pink-eye" in Edinburgh.

During the past week this disease has assumed epidemic proportions among the horses in Edinburgh, and the authorities have closed the public watering-troughs to prevent its spreading further.

Western Infirmary, Glasgow.

Mr. John Wilson, M.P., presided at the annual meeting of qualified contributors to this institution on the 27th ult. The annual report stated that during the past year 33,039 visits had been made by 12,551 out-door patients, and 3970 cases of in-door patients were treated. The cash statement showed a deficit of £5228 5*s.* 9*d.* on the ordinary receipts and expenditure. The extraordinary income (bequests &c.) amounted to £14,321 14*s.* 5*d.* Sir Wm. Hozier, Bart., of Mauldslie Castle, had undertaken to erect, on a site in the neighbourhood of Lanark, the much-needed convalescent home, and hand it over to the infirmary when completed free of cost. It will accommodate about forty convalescents.

During last month 33,816 lb. of diseased or unsound meat were seized by the authorities in Edinburgh.

Dec. 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Sir William Carroll, M.D., J.P.

THIS gentleman died last week at his residence, Fitzwilliam-street, Dublin, at an advanced age. The deceased was an ex-Lord Mayor of the city of Dublin for two years, and for some years was connected with the Coombe Lying-in Hospital.

Death of Dr. Corley of Dublin.

After a few days' illness this gentleman died on Monday last in his fifty-first year. He suffered, it is believed, from cardiac trouble, and also from diabetes, but his death came as a great shock to the profession in Dublin. On last Friday he attended a meeting of the Professors of the College of Surgeons, and appeared in his usual health, but on Saturday he did not lecture at the College—he was one of the professors of surgery—but sent an excuse to the class. By his death the following offices become vacant:—Member of Council, R.C.S.; surgeon to the Richmond Hospital; Fellowship and Examinership in Surgery, Royal University of Ireland; and Medical Visitor to Lunatics, Court of Chancery. The professorship of surgery in the College will not be filled up, there being three other professors in this subject, as arranged under the recent scheme of amalgamation. For the vacancy on the Council I expect there will be three candidates.

Death from Chloroform.

Dr. Chance, deputy coroner for Dublin, held an inquest on Monday on the body of a servant, whose death was caused by the inhalation of chloroform. The young woman, aged twenty-five, suffered from toothache, and was in the habit of applying chloroform to relieve the pain. She was found dead in bed, with a bottle containing chloroform lying beside her. Dr. Boyd, who made the post-mortem examination, gave evidence that death was due to chloroform poisoning, and a verdict to this effect was returned.

Health of Ireland for September Quarter.

The births registered numbered 25,817, equal to 22·0 in every 1000 of the estimated population; and the deaths 16,915, or 14·4 per 1000. The birth-rate in Ireland was 0·9 under the average rate; while the deaths show a decrease of 1040, as compared with the corresponding quarter of last year. Compared with the September quarter of 1889, the returns of pauperism show a decrease of 1257, or 3·0 per cent., in the average number of workhouse inmates on Saturdays during the quarter, and a decrease of 319 in the average number of persons on out-door relief. The general death-rate not only shows a decline, but also the zymotic death-rate was much below the average, being 33 per cent. under the average rate for the third quarter of the last ten years.

Koch's Treatment of Tuberculosis.

Dr. Howard Sinclair, one of the physicians at the Belfast Hospital for Consumption and Diseases of the Chest, has just returned home from Berlin, where he went to study the new plan of treatment introduced by Koch. On Wednesday night he is to address the members of the Ulster Medical Society on the subject.

Medical Officer of Health for Belfast.

It is reported that the Local Government Board, who have a veto in the matter, have refused to approve of the appointment of Dr. Whittaker, which was recently made by the Corporation of Belfast.

Queen's College, Cork.

The number of students joining the medical classes of the first year in this College for the first time up to the present is sixty-five.

The collections on Hospital Sunday for the Queen's County Infirmary amounted to £46 19*s.* 6*d.*

Dec. 2nd

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Transference of Neuropathic Conditions.

AT a recent meeting of the Biological Society MM. Luys and Encausse recorded the results of some experiments they had undertaken with the view of proving whether it were possible to transfer the symptoms of various neurotic conditions from one patient to another. For this purpose they made use of a magnet so shaped as to be able to surround the cranium. The continuity of this magnetic crown was interrupted over the frontal region, each free extremity thus representing a magnetic pole. Empirically they first applied the north pole on the right temple, having interposed between the left temple and the other pole a tampon of cotton in order to ensure the predominance of the action of the north pole on the subjacent skin. This was carried out on a patient the subject of right hemiplegia, the patient being put in the horizontal position. At the end of five minutes, without a word being spoken, they removed the magnet and placed it on the head of another patient who was previously put in a state of hypnotic sleep in an adjoining room. Almost immediately they observed this patient undergo a sudden paroxysm, as if he had received an electric shock, and at once it was found that the whole of his right side was paralysed. Being brought to that hypnotic state known as lucid somnambulism, he spoke, and it was found that he had assumed, as it were, the personality of the hemiplegic subject. His speech was embarrassed, the right arm hung down, and the gait was halting. In a word, MM. Luys and Encausse say that the morbid personality of the hemiplegic patient was thus transferred in all its details to the other with a veritable precision. On awakening, this state disappeared instantly by imperative suggestion. But as to the original patient, he did not cease to be hemiplegic. The morbid nervous force accumulated in the magnetic crown was not altogether exhausted by its first application to the hypnotic subject; they found that similar effects, although less accentuated, were produced in a second subject. They even found that under certain conditions, where the magnet was not allowed to remain long in contact with the patient's head, at the end of two hours it still remained sufficiently active to produce appreciable effects. M. Luys went so far as to say, in conclusion, that he had been enabled by this means to transfer the painful contractures of a patient under his care in hospital, and whom he was treating for traumatic myelitis. That he was equally successful with cases of severe neuralgia and sciatica, and, what he had no doubt would be considered strange, certain cerebral conditions, such as vertigo and loss of memory, were benefited in this way.

Hysterectomy in Paris Hospitals.

The statistics of the hysterectomies done in the Hospital Bichat from 1883 to 1890 were recently given by M. Terrier at the Surgical Society. He divided the operations into two series. The first comprised supra-vaginal amputations of the uterus, with external treatment of the pedicle. In 1883 there were two such operations performed, with two recoveries. In 1884 there were again two, with one death from peritonitis. In 1885, five hysterectomies, with only one success and four deaths; three of these cases succumbed to suppurative peritonitis, the fourth to internal strangulation. In 1886 six operations were undertaken, with three recoveries and three deaths—one from hæmorrhage of the pedicle and two from peritonitis. In 1887 eight operations, of which four survived and four succumbed—one from shock, four from peritonitis. In 1888 five operations and five recoveries. In 1889 seven operations, of which five recovered and two died—one from internal strangulation, the other from hæmorrhage. In 1890 three operations have so far been performed, of which two recovered and the other succumbed to peritonitis. Thus in the first series there figure thirty-eight hysterectomies, with twenty-three recoveries and fifteen deaths, giving a mortality of 39 per cent. In the second series are included those operations in which the pedicle was treated internally. In 1889 four operations after this method were performed, resulting in one recovery and three deaths from peritonitis. In 1890 four such operations were done, followed by three recoveries and one death from hæmorrhage of the pedicle. This second series, therefore, gives the discouraging record of a 50 per cent. mortality. The presence of the pedicle, M. Terrier went on to say, constituted one of the chief difficulties of the operation of hysterectomy. The uterus itself is usually in a state, more or less pronounced, of metritis, and the pathological germs exist not only in the mucous membrane, but also in the muscular tissue itself. Cauterisations of the cervical canal are insufficient to destroy these germs, whence arises the great danger of infection over the method of fixation. On the other hand, the elastic ligature dropped back into the abdomen does not always become encysted, and this may determine sometimes suppurative peritonitis. Therefore much remained yet to be perfected in the operation. An ideal proceeding would be, after the enucleation of the tumour, to close the pouch in which it was contained by bringing the walls together without the formation of any pedicle. He was aware, however, that this plan could only be carried out in certain cases of interstitial growth; the great majority of cases required the leaving of a pedicle.

A Medico-Legal Institute.

The days of the old Morgue are numbered. It has long been felt that this grim structure was altogether too small and quite inadequate to the requirements of public medico-legal inquiries. Some years ago there was talk of building a more suitable and roomy structure; plans were prepared, but the project was abandoned, owing to the heavy estimated cost. The Municipal Council, urged on by Dr. Brouardel, has now taken the matter up, and the plans have been reconsidered, with the result that a medico-legal institute worthy of the city will be shortly erected. The new Morgue will be the faculty school of legal medicine, for not only will necropsies be performed as hitherto, but a course of lectures will be given to students, who will also have the advantage of a complete laboratory of toxicology, as well as practical instruction in medico-legal work.

Paris, Dec. 2nd.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Tempora Mutantur.

WHILE previously it was difficult for a phthisical patient to get admittance into the clinical wards of the General Hospital here, and tuberculosis has not been found interesting enough, the clinics have become crowded by the reception of such patients since a supply of the anti-tuberculous fluid has arrived in Vienna. In the course of the last week nearly all the physicians and surgeons of hospitals commenced the experiments on Koch's method of treatment, and the professors are demonstrating the treatment to their students. At Professor Köhler's clinic for internal diseases twenty-one tubercular persons have been injected, all exhibiting the well-known reaction. Among them were seventeen cases with tuberculosis of the lungs, which showed the characteristic changes of the sputum and of its bacilli, two cases of caries vertebrarum, one of peritonitis, and one of pleuritis, in which an absorption of the pleuritic effusion after the injection could be proved by physical examination. In one of the cases of tuberculosis of the lungs the fever remained as low as 38°C. (100·4° F.). The doses commenced with 1 milligramme, and were increased, if repeated in the same patients, up to even 1 centigramme. At Professor Nothnagel's clinic for internal diseases a number of patients are under treatment by Koch's method, but no communication will be made before observations on the cases have been concluded. Some of the cases, though exhibiting grave symptoms of tuberculosis, showed no reaction at all after the injection of 1 milligramme—a dose which must be regarded as sufficient, because, according to Koch's statements, the more tubercular matter present the less liquid is wanted to establish reaction. At Professor Billroth's clinic a case occurred which proved to be refractory to repeated injections of 1 centigramme, while the other cases of surgical tuberculosis were reacting. The most interesting results were obtained at Professor Kaposi's clinic for skin diseases. There fourteen cases of lupus vulgaris, two of syphilis, two of leprosy, one of tuberculosis verrucosa cutis (lupus verrucosus), one of lupus erythematosus, and one of sarcoma of the pharynx, were treated by injections of Koch's fluid. In the cases of lupus vulgaris the characteristic reaction set in; the two cases of syphilis showed no reaction at all, and the same negative result has been obtained in the case of tuberculosis verrucosa cutis with 7 milligrammes of the fluid. Some years ago the presence of tubercle bacilli in the latter

affection was proved by Riehl. One of the leprosy cases showed general reaction (fever) as well as a local reaction marked by swelling of the leprous region of the face. The lupus erythematosus showed a strong reaction (high fever lasting some days and local swelling), and in the case of the sarcoma of the pharynx fever also occurred after the injection, accompanied by a slight swelling of the part of the mucous membrane surrounding the sarcoma; but it is possible that in the latter case the symptoms attributed to the reaction may be accidentally produced by an occasional angina. In general it has been concluded from the cases here that the fever does not run the typical course which has been described in the Berlin publication, and that in the case of the new treatment of tuberculosis generalising from single observations is just as fruitless as in other departments of medical science. Among the concomitant symptoms of the reaction only the erythema of the skin and vomiting have been observed here, while no icterus, so frequently observed at Berlin, came under observation. It seems that the poison produced by the injection acts on the blood as the presence of albumen, of urobilin, of colouring matters of the bile could be detected in the urine after the injections. Unfortunately no examination of the blood itself has yet been made, but I hope that the suggestion of examination in this direction will not be overlooked in further experiments. The dermatologists here believe that the erythema and exanthem produced by the injection is of a toxic origin, and not due to a local reaction, as is assumed by some physicians here. This view seems to be confirmed by an experiment made on a young physician here, who, being a perfectly healthy strong man, showed after the injection of two milligrammes a reaction marked by high fever (39·3° C.) and an erythema on the right forearm. It is extremely difficult to judge of the value of the new treatment after these first preliminary clinical results, or even its diagnostic importance, and it seems that individual circumstances play a more important *rôle* in the reaction than could be believed to be possible after the perusal of Koch's recent publication.

Vienna, Dec. 4th.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on December 2nd, 1890.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	284	46	..	76	5	411	442
North-Western Hospital	325	37	..	14	1	377	443
Western ,,	169*	19	..	17	2	198	262
South-Western ,,	254	..	..	..	..	254	340
South-Eastern ,,	267	42	1	62	1	373	462
Northern ,,	418	30	..	18	..	466	480
Gore Farm ,,	205	..	..	..	..	205	300
Totals	1913	174	1	187	9	2284	2729

* 1 infant and mother.

Medical News.

UNIVERSITY OF EDINBURGH.—The following gentlemen received the degrees of M.B. and C.M. on Nov. 29th:—

Duncan Drummond, Comrie, Perthshire; Herbert H. Hearsey, Inner Temple, London; Wm. S. Kerr, Dumfries; Henry J. Mackenzie, Mayfield-road, Edinburgh; John Welsh Smith, Dalry, Galloway; Wm. W. Williamson, Lymm, near Warrington.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates passed the Examinations in the subjects indicated during November:—

Surgery.—G. M. Arkle, Liverpool University College; T. S. Byass, University College; J. George, King's College; W. Hawker, Cambridge University and Middlesex Hospital; T. C. Hughes, Westminster Hospital; B. Nauth, L.M.S. Lahore and Punjaub University; H. F. Nunes, St. Mary's Hospital; G. P. Smith, Guy's Hospital; C. T. Standring, King's College; H. J. Thomas, Bristol; R. L. Thomas and F. Turner, University College; J. Wells, London Hospital; F. W. Welstead, Guy's Hospital.

Medicine, Forensic Medicine, and Midwifery.—W. L. W. Buss, Middlesex Hospital; F. L. Dick, Royal Free Hospital; L. F. Dods, St. Bartholomew's Hospital; E. J. Finch and G. Garrard, St. Mary's Hospital; C. E. M. Hey, B.A., Cambridge University and St. Mary's Hospital; C. M. Leakey, London Hospital; A. E. Leitch, Liverpool University College; R. H. D. Mahon, St. Thomas's Hospital; J. S. Tabb, Charing-cross Hospital; R. L. Thomas, University College; H. A. Vernon and H. Watts, London Hospital.

Medicine and Forensic Medicine.—F. W. Mawby, Guy's Hospital; H. F. Nunes, St. Mary's Hospital.

Medicine and Midwifery.—F. B. Shaw, Middlesex Hospital.

Medicine.—H. Fairfax, Charing-cross Hospital; A. W. C. Herbert, St. Mary's Hospital.

Forensic Medicine.—G. M. Arkle, Liverpool University College.

The following, having passed the qualifying Examination in Medicine, Surgery, and Midwifery, received the diploma of the Society, entitling them to register and to practise in the same:—

F. L. Dick, L. F. Dods, G. Garrard, C. E. M. Hey, B.A. Cantab.; C. M. Leakey, R. H. D. Mahon, R. L. Thomas, H. A. Vernon, H. Watts, J. Wells, F. W. Welstead.

UNIVERSITY OF CAMBRIDGE.—The Thruston prize, of the value of £54, has been awarded to William Ewart, M.D., assistant physician to St. George's Hospital, London.

THE Committee on Hospitals, we learn, will not meet before Christmas, probably not till the beginning of February.

VACCINATION GRANTS.—The following gentlemen have received the Government grant for efficient vaccination:—Mr. John Hamilton, F.R.C.S. Ed., Swadlincote (seventh time); Dr. J. R. White, Brentwood (second time).

MEDICAL MAGISTRATE.—Dr. Thomas Rutherford Adams, M.D., L.R.C.P., has been placed on the Commission of the Peace for the borough of Croydon, county of Surrey.

ROYAL INSTITUTION OF GREAT BRITAIN.—Mr. Charles Arthur Aikin, F.R.C.S., and George Danford P. Thomas, M.D., M.R.C.S., have been elected members of the Royal Institution.

THE DARWIN MEDAL.—This medal has just been awarded for the first time by the Royal Society, its recipient being Mr. Alfred Russel Wallace, F.R.S., on account of his well-known researches in the Malayan Archipelago. The general design of the medal was, it appears, suggested by Dr. John Evans, treasurer of the Royal Society, and president of the Numismatic Society, and the execution of the dies was entrusted to Mr. Allan Wyon, F.S.A.

LITERARY INTELLIGENCE.—A third edition of Dr. Crookshank's "Manual of Bacteriology," revised throughout, with additional plates and engravings, will be published this week by Mr. H. K. Lewis, 136, Gower-street.—With a view to keep non-Italian readers in touch with the progress of medicine and surgery in Italy, there will be published at Nice, under the editorship of Professor Bonelli, a quarterly serial entitled *Italie Scientifique Revue de Biologie, Chimie, Hygiène, Météorologie, &c.* The first number will appear shortly, and will contain contributions from eminent physicians and surgeons attached to the principal clinics throughout the Peninsula.

THE ROYAL SOCIETY.—St. Andrew's Day falling this year on Sunday, the anniversary meeting of the Royal Society was held on Monday at Burlington House. The following were elected members of the Council:—President: Sir William Thomson, D.C.L., LL.D. Treasurer: John Evans, D.C.L., LL.D. Secretaries: Professor Michael Foster, M.A., M.D., and Lord Rayleigh, M.A., D.C.L. Foreign Secretary: Archibald Geikie, LL.D. Other members of the Council: Professor William Edward Ayrton; William Henry Mahoney Christie, M.A.; Professor W. Boyd Dawkins, M.A.; James Whitbread Lee Glaisher, D.Sc.; Hugo Müller, Ph.D.; Professor Alfred Newton, M.A.; Sir William Roberts, M.D.; William Chandler Roberts-Austen, F.G.S.; Professor E. Albert Schäfer, M.R.C.S.; Sir George Gabriel Stokes, M.A.; Lieut.-General Richard Strachey, R.E.; Professor Joseph John Thomson, M.A.; Professor Thomas Edward Thorpe, B.Sc.; Sir William Turner, M.D.; Professor Sydney Howard Vines, M.A.; General James Thomas Walker, C.B. The retiring president, Sir G. Stokes, then delivered his address.

A NEW HOSPITAL FOR PLYMOUTH.—It is stated that a hospital, purely for the accommodation of private patients who come to the neighbourhood for surgical or medical treatment (a long-felt want), is about to be provided by a number of gentlemen, chiefly members of the faculty. A site has been selected at Woodside, and the necessary steps taken for the erection of such an institution.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ALDRIDGE, NORMAN E., M.B., C.M., L.R.C.S. Edin., has been appointed Assistant Physician to the Royal Hants Infirmary.

ALLDEN, SIDNEY, M.D. Durh., B.S., L.R.C.P., M.R.C.S., has been appointed Assistant Resident Medical Officer to the Hospital for Consumption and Diseases of the Chest, Brompton.

BESWICK, ROBT., M.R.C.S., has been appointed Deputy Medical Officer for the St. Paul's Mission, Bunhill-fields.

CARSLAW, JOHN HOWIE, M.A., M.B., C.M., has been appointed Extra Dispensary Physician to the Western Infirmary, Glasgow.

EDEN, R. A. S., M.B., C.M. Aberd., has been appointed House Physician and Surgeon to the Aberdeen Sick Children's Hospital.

HAMILTON, D. H., M.B., B.Ch., B.A.O. Roy. Univ. Irel., has been appointed Surgeon to the Norton Colliery and Ironworks, vice Dr. Russell, resigned.

HILDYARD, R. L., M.R.C.S., has been appointed Medical Officer for the Second District of the Langport Union, vice Valentine, resigned.

HILL, T. EUSTACE, M.B., C.M. Edin., B.Sc., has been appointed Medical Officer of Health for South Shields.

KEMPE, A. W., M.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for Exmouth.

KERSHAW, J. E., M.B. Oxon., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer to the Brompton Hospital for Consumption.

LAWSON, F. D., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer of Health and Vaccination Officer for Chiddingfold.

O'HAGAN, T. J. J., L.R.C.S., L.R.C.P.S., has been appointed District Surgeon for the Great Western Railway Company at Garston, Liverpool.

POWELL, W. WYNDHAM, L.R.C.P., M.R.C.S., has been appointed Third Attending Medical Officer to the Free Dispensary, Pimlico-road.

RILEY, F. R., M.R.C.S., L.R.C.P., has been appointed House Surgeon to the London Hospital.

RUTHERFURD, HENRY, M.A., M.B., C.M., has been appointed an Extra Dispensary Surgeon to the Western Infirmary, Glasgow.

SANTI, PHILIP R. W., F.R.C.S., L.R.C.P. Lond., has been appointed Senior Demonstrator of Anatomy to the University of Durham College of Medicine, Newcastle-on-Tyne.

SKINNER, GEO. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health and Public Vaccinator for the Shire of Broadford, Victoria.

STYLE, F. W., L.R.C.P. Lond., M.R.C.S. has been appointed Medical Officer of Health to the Hucknall Huthwaite Local Board.

SUNDERLAND, OLIVER, L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Bexley Urban District of the Dartford Union.

WALLIS, F. C., B.A., M.B., B.P., has been appointed Assistant Demonstrator of Anatomy at St. Bartholomew's Hospital.

YEOMAN, CHAS., M.B. Camb., M.R.C.S., has been appointed Medical Officer for the Eighth District of the North Bierley Union.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons.

COUNTY AND COUNTY OF THE BOROUGH OF CARMARTHEN INFIRMARY. House Surgeon. Salary £100 per annum, with board, lodging, fire, light, and washing. (Apply to the Secretary, 11, Morley-street, Carmarthen.)

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon. Salary to commence at £85 per annum, with board, residence, and washing in the house.

EAST RIDING ASYLUM, Beverley.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, and washing.

EDMONTON UNION.—District Medical Officer of the Edmonton District. Salary £60 per annum, and 20 per cent. thereon in lieu of payments for expensive medicines, with the extra fees prescribed by the Orders of the Local Government Board. The Officer will also be appointed Public Vaccinator at the remuneration of 1s. 6d. for each case of successful primary vaccination.

EDMONTON UNION.—Medical Officer of the Workhouse at Edmonton. Salary £150 per annum, inclusive of remuneration for attending all Midwifery cases and inclusive of attendance on officers. A fee of 1s. 6d. will be paid for each case of successful primary vaccination.

LINCOLN ODDFELLOWS' MEDICAL INSTITUTE.—Assistant Medical Officer. Salary £104, out-door. (Apply to the Resident Medical Officer, 5, Unity-square, Lincoln.)

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary £30 per annum, with apartments, board, and washing.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Senior Resident Medical Officer for six months. Salary £60 per annum, with apartments, board, and washing.

MORPETH DISPENSARY.—House Surgeon. Salary £120 per annum, with house, coal, and gas free.

ROCHDALE INFIRMARY.—Resident Medical Officer. Salary £80 per annum, with board, residence, and washing. (Apply to the Hon. Secretary, 2, South Parade, Rochdale.)

ROYAL BERKS HOSPITAL, Reading.—Assistant House Surgeon. Salary £40 per annum, with board and lodging.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Junior Resident Medical Officer for six months.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Registrar (Medical and Surgical) for twelve months.

SMEDLEY'S HYDROPATHIC ESTABLISHMENT, Matlock.—Resident Junior Physician for two years, with honorarium of 100 guineas the first, and salary of £200 for second year, board and residence included.

STAFFORDSHIRE COUNTY LUNATIC ASYLUM, Stafford.—Junior Assistant Medical Officer. Salary to commence at £100 per annum, with furnished apartments, board, and attendance.

ST. SAVIOUR'S UNION, Surrey.—Assistant Medical Superintendent at the Infirmary, East Dulwich-grove, S.E. Salary £130 per annum, with furnished apartments, board, and washing. (Apply at the Clerk's Offices, John-street West, Blackfriar's-road, S.E.)

TOWNSHIP OF TOXTETH PARK, Liverpool.—Second Resident Assistant Medical Officer of the Workhouse and Infirmary for six months. Salary at the rate of £75 per annum, with rations of a first-class officer and apartments. No extra fees allowed, but drugs and appliances provided. (Apply to Mr. Moulding, 15, High-park-street, Liverpool.)

VICTORIA HOSPITAL FOR SICK CHILDREN, Queen's-road, Chelsea, S.W. House Physician to the In-patients of the Hospital. Honorarium of £50 per annum, with board and lodging in the Hospital.

VICTORIA HOSPITAL FOR SICK CHILDREN, Queen's-road, Chelsea, S.W. House Surgeon to the In-patients of the Hospital. Honorarium of £50 per annum, with board and lodging in the hospital.

Births, Marriages, and Deaths.

BIRTHS.

CHAVASSE.—On Nov. 29th, at Carpenter-road, Edgbaston, Birmingham, the wife of Thomas Frederic Chavasse, M.D., of a son.

FERRIS.—On Dec. 1st, at Uxbridge, the wife of John Spencer Ferris, M.B. Lond., of a son.

HATCH.—On Nov. 27th, at Breach Candy, Bombay, the wife of Surgeon-Major W. K. Hatch, M.B., F.R.C.S., of a son.

MORGAN.—On Nov. 30th, at Hurdis House, Seaford, Sussex, the wife of W. Pringle Morgan, M.B., of a daughter.

MULOCK.—On Nov. 30th, at Southsea, the wife of the late Edward Ross Mulock, Staff Surgeon R.N., of a son.

PECK.—On Nov. 30th, at Gower-street, the wife of Awdry Peck, M.A. Oxon., M.R.C.S., L.R.C.P., of a son.

WILSON.—On Dec. 2nd, at 14, St. Giles's, Oxford, the wife of George John Wilson, M.B., M.R.C.S., of a daughter.

MARRIAGES.

ERSKINE—MILLAR.—On Nov. 26th, at Broadhaugh, Newport, Fifeshire, John Low Erskine, M.D., Deputy Surgeon-General, Army Medical Department, to Helen, elder daughter of the late Rev. George Millar, F. C. Clunie, Perthshire

FINK—LEWIS.—On Dec. 2nd, at Harecourt Chapel, Canonbury, Surgeon George Herbert Fink, I.M.S., late 36th Sikhs, to Edith, fourth daughter of Wm. D. Lewis, of Highbury-park, London, N.

ROBINSON—SEYMOUR.—On Nov. 27th, at St. Saviour's Church, Eastbourne, George Somerville Robinson, Surgeon-Major, Scots Guards, eldest son of Fredk. Robinson, M.D., F.R.C.P., to Adelaide Maud, widow of Robert Seymour, Bellione, Queenstown.

DEATHS.

BROMLEY.—On Nov. 3rd, suddenly, at sea, on the voyage home from Calcutta, Surgeon of s.s. *Clan Buchanan*, Henry Urgent Bromley, M.R.C.S., L.R.C.P. Edin., eldest son of the late Capt. H. B. Bromley, of the 10th Regt., aged 30.

EVANS.—On Nov. 25th, at his residence, Bd. Mailliot, Neuilly, Seine, France, Dr. Theodore S. Evans, brother to Dr. Thos. W. Evans.

GUNN.—On Dec. 2nd, at Rochester, Kent, William Gunn, M.D., R.N., aged 86.

LYDDON.—On Nov. 25th, suddenly, at Faversham, William Reeks Lyddon, L.R.C.P. Edin., L.R.C.S. Irel.

MONTGOMERY.—On Nov. 24th, at Parrock-street, Gravesend, Henry Montgomery, Surgeon; formerly of Carlow, Ireland.

PERKINS.—On Nov. 25th, at Mortimer-street, Cavendish-square, Houghton Perkins, F.R.C.S., aged 82.

PORTEOUS.—On Nov. 30th, at Lauriecknowe, Dumfries, Robert Burnet Porteous, M.D., formerly of Blackburn, aged 44.

RING.—On Nov. 28th, at Cambridge-gardens, Kilburn, John Ring, Jun., M.R.C.S., L.R.C.P. Lond.

RING.—On Nov. 30th, at Tunbridge Wells, Edmund Cuthbert Ring, M.R.C.S., L.R.C.P., only son of the late D. Babington Ring, Esq., Barrister-at-Law.

SKINNER.—On Nov. 30th, at Winchelsea, Robert Valle Skinner, surgeon, aged 61.

WHITE.—On Nov. 6th, at his residence, Doncaster, Robt. Henry White, Surgeon, aged 70.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

Monday, December 8.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.
ST. MARK'S HOSPITAL.—Operations, 2.30 P.M.; Tuesday, 2.30 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.
SOCIETY OF ARTS.—8 P.M. Prof. Vivian B. Lewes: Gaseous Illuminants. (Cantor Lecture.)
MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. William Adams: Congenital Contraction of the Fingers, and its Association with "Hammer-toe"; its Pathology and Treatment.—Mr. Reginald Harrison: Remarks on some cases in which a Non-malignant Communication existed between the Bladder and the Intestines.

Tuesday, December 9.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.
GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8.30 P.M. Dr. F. Hewitt: Clinical Observations upon Respiration during Anæsthesia, with special reference to the Causes of Embarrassed and Obstructed Breathing.—Mr. R. Clement Lucas: Nephrolithotomy (following Nephrectomy) for Total Suppression of Urine lasting five days; complete recovery and good health five years after operation.

Wednesday, December 10.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.
CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.
ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.
HUNTERIAN SOCIETY.—8 P.M. Pathological Evening. Mr. Openshaw: Sarcoma of Scapula.—The President: (1) Aneurysm of Arch of Aorta compressing Trachea; (2) Ulceration of Large Intestine.—Mr. John Poland: Impacted Fracture of Tibia.—Dr. R. Hingston Fox: Tubercular Disease of Kidneys.
SOCIETY OF ARTS.—8 P.M. Mr. F. Bailey: Electric Lighting Progress in London.
BRITISH GYNÆCOLOGICAL SOCIETY.—8.30 P.M. Adjourned Discussion on Dr. Aveling's paper on "The Registration of Midwives' Bill (Amended)." Specimens by Dr. Purcell and Dr. Fenton. Council at 8 P.M.

Thursday, December 11.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.
OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.—8.30 P.M. Patients and Card Specimens at 8 P.M. Mr. Stanford Morton: Diphtheritic Paralysis of External Recti, with case.—Mr. Brailey: On some Points in the Development of Cataract.—Mr. R. W. Doyne: Paresis of External Recti, with case.—Mr. Hartridge: Hæmorrhage into Glaucoma Cup.—Mr. Treacher Collins: Rupture of the Posterior Capsule of the Lens following a Blow on the Eye from a Stone.—Mr. Beaumont (Bath): ? Macular Coloboma (living specimen).

Friday, December 12.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
CLINICAL SOCIETY OF LONDON.—8.30 P.M. Dr. Bristowe: Death after Exploratory Puncture of Hydatid of Lung.—Dr. Sidney Coupland and Mr. Pearce Gould: Double Empyema; free drainage of both pleural cavities; recovery.—Dr. A. F. Voelcker: Empyema in which a communication was established with the Œsophagus.—Dr. Herbert Hawkins: Abscess of the Lung, probably of pneumonic origin; drainage; recovery.

Saturday, December 13.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Stewart's Instruments.)

THE LANCET Office, Dec. 4th, 1890.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Nov. 28	29·97	N.E.	25	..	..	30	23	·02	Snowing
,, 29	30·16	N.E.	30	..	36	35	23	·07	Overcast
,, 30	30·39	W.	31	..	53	39	23	..	Cloudy
Dec. 1	30·24	S.W.	36	35	44	41	30	·02	Overcast
,, 2	29·81	N.E.	37	35	..	38	34	..	Foggy
,, 3	29·73	N.E.	38	37	..	44	36	..	Foggy
,, 4	29·72	N.E.	44	44	..	46	38	·03	Raining

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

THE MIDWIVES' BILL.

Dr. Rentoul sends us several suggestions for amendment of the above Bill, most of which we have seen before. Some of them are very reasonable. He is especially fearful of the wholesale admission of 24,000 midwives at once to the Register on the score of practice, and would alter Clause 9 so as to admit to the Register only those possessed at the time of the passing of the Act of a certificate of midwifery; thereafter those becoming possessed of a certificate from an Examining Board under the Act; also every woman actually practising as a midwife before Jan. 1st, 1870, and who is able to produce a certificate to that effect from two registered medical practitioners: all the above to pay a registration fee of £2. He urges the reference of the entire subject to a Select Committee, to take evidence from those competent to advise Parliament and the Government.

House Surgeon.—"A Manual of Nursing," by C. J. Cullingworth, M.D. (Messrs. J. & A. Churchill and Co., 11, New Burlington-street); "A Manual of Nursing, Medical and Surgical," by Laurence Humphry, M.R.C.S. (C. Griffin and Co., Exeter-street, Strand, W.C.); "Antiseptics—a Handbook for Nurses," by Annie M. Hewer (Crosby Lockwood and Co., Stationers' Hall-court, Ludgate-hill).

Alpha.—The rule varies in different places. Our correspondent should find out the rule of his neighbourhood, and act on it.

In Doubt.—The widow and family should have the benefit of the doubt.

New Zealand.—"The Operations of Surgery," by Jacobson.

PRACTICE OF BRITISH MEDICAL PRACTITIONERS IN SWITZERLAND.

To the Editors of THE LANCET.

SIRS,—In reference to the petition forwarded to the Swiss authorities on behalf of Dr. Holland, practising at St. Moritz, I should like to inform you that a similar petition was presented a few months ago on my behalf, signed by many of my patients and visitors who were at that time residing in Maloja. The petition contained the names of many influential persons, amongst whom were Mr. H. M. Stanley, the late Sir Richard Burton, Lord Elcho, the Duchess of Leinster, Lady Mabel Fitzgerald, Lord Dunraven, Lady Elizabeth Grey, Lady Taunton Prince Strozzi, the Marquis de la Matilla, Baron and Baroness Pradella, and others, with many signatures of Justices of the Peace, officers of the Army, and members of the learned professions. It is right to know that the spirit of intolerance exhibited against two English practitioners in the Grissons does not originate with the Swiss themselves, but only emanates from a section of the Swiss medical profession.

I am, Sirs, your obedient servant,

Hansel, Devon, Dec. 1st, 1890. A. TUCKER WISE, M.D.

A NEW LARYNGOSCOPIC LAMP.

To the Editors of THE LANCET.

SIRS,—As the inventor of this lamp, will you permit me to answer Mr. Lennox Browne's criticisms in your issue of the 29th ult.? And this will be all the more easy after an examination of the woodcut in his work. He says that my lamp does not differ from his in principle or action. If by this he means the use of a lime-light illumination, I admit he is right, because this method of light is free to everyone; but to say that his lamp and mine are practically one and the same in action is absurd. I do not claim to have introduced the oxy-hydrogen light for throat examination; but what I do claim is to have produced a lamp which is automatic in its adjustment, and which can be placed at any height, angle, or required position without the aid of catches, ratchets, or rack-movements of any kind. This enables the operator to have one hand perfectly free. The patient can either stand, sit, or lie down, and the lamp can be brought to the required position with the greatest facility. The fact is, Mr. Lennox Browne has criticised without taking the trouble to see the lamp. He says it has points of disadvantage and retrogression. With regard to the first, he must know that, provided there is sufficient ventilation, it does not matter in the least what the diameter of the lamp may be. Practical experience, however, is the best answer. I assert that at no time is there any danger of the lens being fractured, as there is absolutely no confined heat in the lamp, but always a sufficient up draught to keep it cool. With reference to his other point, whatever disadvantages he may have experienced from heat transmitted through his lens (so much so that he is obliged to use a water-cell in front), I am prepared to prove that with mine no water-cell is required. Again experience supplies the answer. At no time during an examination or prolonged operation is an uncomfortable sensation of heat experienced either by the operator or patient. My agents, Messrs. Arnold and Sons of West Smithfield, will be pleased to show my lamp to anyone interested in the same. I am, Sirs, your obedient servant,

Dec. 2nd, 1890. THE INVENTOR.

THE INFLUENZA.

To the Editors of THE LANCET.

SIRS,—The last Prison Commissioners' Report affords evidence that the epidemic of influenza was not due to the effect of a wave of the poison passing over us, but rather to its contagiousness. Taking those prisons in which the number of officers (living outside their prisons) and the number of prisoners (living in separate cells) affected have been reported, we find that the percentage of officers to prisoners was in most cases much greater; or where the number of officers has not been reported, the same effect is shown by the note of the prevalence of the epidemic in the town.

	Total Number of Officers to the Prison.	Number affected.	Average Number of Prisoners.	Number affected.
Canterbury	20 ..	10	140 ..	9
Lewes	29 ..	very prevalent	247 ..	0
Maidstone	33 ..	5	224 ..	12
Norwich	19 ..	17	137 ..	0
Portsmouth* ..	— ..	not stated	127 ..	0
Ruthvin*	— ..	not stated	40 ..	1
Winchester ..	37 ..	0	338 ..	3

* Though very prevalent outside.

I may add that in two large institutions in this town, where large dormitories are used, that a very large percentage of the inmates in each were seized with the influenza.—Yours obediently,

Canterbury, Dec. 1890. PUGIN THORNTON.

THE TREATMENT OF REFUSE.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to correct an error in your last edition, when referring to the visit of medical officers of health and others to the Ealing Sanitary Depôt, and detailing the various matters of interest I had the pleasure of showing them. You state "All are the invention of Mr. Charles Jones," whereas the "Destructor" is Fryers (Manlove, Alliott and Co.), with improvements of my own; and the "Road Sweeper" Carter and Keeble, of Bury St. Edmunds. The "Fume Cremator," which has been working most satisfactorily since 1885, is my invention"; also the "Water Van." Necessity, the mother of invention, brought about the "Fume Cremator," in order to deal with the fine dust and gases thrown off by the "Destructor," and it has been eminently successful. I may add that I am always pleased to see anyone interested in this subject, and gladly show them over the works.

I am, Sirs, yours obediently,

CHARLES JONES, A.M.Inst.C.E.,
Engineer to the Ealing Local Board, and Past President of the Association of Municipal and
Ealing, W., Dec. 3rd, 1890. Sanitary Engineers.

"GLYCERINE TINCTURES."

To the Editors of THE LANCET.

SIRS,—May I inquire through your columns if any of your numerous readers can give me information as to how to make the so-called "glycerine tinctures," which I am desirous of doing for myself, as well as their opinion of their value as medicine? The proportion of glycerine to water (and whether hot or cold), the length of time for maceration, as well as the most suitable drugs, are specially desired. Yours truly,

Nov. 25th, 1890. C.

HOW THE PROFESSIONAL SITUATION STRIKES ONE LONG ABSENT.

A CORRESPONDENT who has been absent twenty years sends us his impressions as to the condition of the profession. In the present state of our columns we have no room for his long letter. We can only give the drift of his conclusions as follows:—The profession is in a bad way. The public has a low opinion of it, and the condition of its members financially is one almost of pauperism. He denies that it is over-crowded; but he attributes the mischief to the touting competition of Hospitals and Dispensaries, to the selfishness of the Medical Council, and to the prevalence of pluralities in medical appointments. He instances one or two cases of medical men holding all sorts of different and lucrative posts, while others are unemployed. There is some truth in what our correspondent says, but we hope he exaggerates the financial straits of the profession.

Mr. A. Douglas.—Our correspondent could doubtless obtain assistance in preparing for a German degree. French degrees are for the present not open to foreigners. It is probable that several universities in different countries—as, for example, Ghent, Arnheim, Erlangen, Heidelberg, Bern, Geneva, Padua, or Naples—might consent to allow an English medical man to pass their examination for the M.D. degree; but no foreign university, except Brussels, as far as we are aware, arranges for interpretation, and lays itself out for granting degrees to Englishmen.

General Practitioner.—We fear it would be deemed a cause of rejection. But our correspondent should wait upon the Director-General, and ask him to be kind enough to have the young gentleman examined, with a view to save expense and disappointment in case it should be deemed a disqualification. We believe his request would be granted.

Dr. A. L. Grifith.—To the best of our belief, a full report of the debate was given in the *Berl. Med. Wochens.* of a date immediately preceding the appearance of the article in our columns.

Mr. H. Courtney Fox is thanked for his suggestions.

"THE TITLE OF 'PHYSICIAN' USED BY GRADUATES."

To the Editors of THE LANCET.

SIRS,—Your correspondent M.R.C.S., L.S.A., of the 15th inst., signing himself "Physician" upon the assumption that the Licence in Medicine of the Apothecaries' Hall entitles him to do so, in my opinion cannot legally term himself "physician." The Hall diploma distinctly states that "he is an Apothecary and duly qualified to practise as an Apothecary." The title of physician is conferred solely upon those holding the diploma of a College of Physicians, as likewise the title of surgeon is conferred solely upon those holding the diploma of a College of Surgeons. A Licentiate of the Apothecaries' Hall passing the new examination is now fully qualified in Medicine, Surgery, and Midwifery, but nevertheless he cannot legally term himself a Physician and Surgeon. I enclose my card and beg to remain, yours truly,

Nov. 18th, 1890. AN APOTHECARY.

DIET IN DIABETES.

To the Editors of THE LANCET.

SIRS,—I have a patient suffering from diabetes whom I have sent to several consulting physicians for advice. His diet is, of course, curtailed, as usual in such cases; but there seems to be a great difference of opinion as to the fruits allowable, one consulting physician recommending both apples and oranges, while another emphatically condemns them. The patient has been advised by friends to see Dr. So-and-So, and by another Dr. So-and-So, and at his own request I sent him to each, with the above result. Now, can any practitioner give on good authority a list of the fruits and vegetables which may and may not be allowed in such cases?—I am, Sirs, yours truly,

November, 1890. M.B. GLAS.

Dr. H. W. Phillips.—The questions put appear to be answered as to a temporary assurance by the paragraph extracted from the notice of the Imperial Life Office, which appeared in our impression of last week (page 1167), and as to the reduced premium rate at starting by the special table prepared by the Standard Life Office, which appeared in our Life Assurance Supplement on the 15th ult. (page 1082). These are both offices of the highest standing; but as they have not definitely undertaken to make an allowance in lieu of commission, it would, we think, be wise to stipulate for this concession.

M. M. M.—Murchison ("Continued Fevers") met with eight cases of the coexistence of scarlatina and enteric fever; and considerable stress was laid on the assumed relationship between the two diseases by Dr. John Harley, in his article on "Typhoid Fever" in Reynolds' "System of Medicine," vol. i., p. 381.

Hospital Visitor.—Our correspondent need not be under any apprehension. Due precautions are taken in such cases.

Mr. Quinlivan.—The insurance office will no doubt be willing to effect an arrangement on the strength of the policy held.

Dr. Seymour Taylor.—We have no recollection of the publication of any other article on the subject than that mentioned.

Sabae and *C. J. S.* have not enclosed their cards.

QUALIFICATION FOR PUBLIC HEALTH APPOINTMENTS.

Mr. E. Lynn.—The requirement as to a diploma in Public Health only applies to districts or combinations of districts which at the census preceding the election had populations of 50,000 or more, and it is subject to exemption in the case of those who have for three consecutive years preceding 1891 held the post of medical officer of health for a district having 25,000 inhabitants. But it is well to remember that, apart from the actual requirement of the Local Government Act, the authorities of many districts which have smaller populations announce that they will only elect officers holding such diplomas.

OWING to the pressure on our columns occasioned chiefly by the large amount of space necessarily devoted to the subject of Professor Koch's discovery, we are compelled to hold over many articles and communications which otherwise we should gladly have published in our present issue.

ERRATA.—It will have been observed that the charts illustrating Dr. Crocker's paper, published last week, were misplaced by the printer. Their position should, of course, have been reversed.—In an annotation last week, headed "Diphtheria in Animals," we inadvertently attributed the article in the *Veterinary Journal* from which we quoted to Professor Walley, instead of to the Editor of that journal, Professor G. Fleming.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Charteris, Glasgow; Dr. Boobbyer, Nottingham; Dr. Saundby; Mr. Stanmore Bishop, Manchester; Surgeon-Major Lawrie, Hyderabad; Mr. Lawson Tait, Birmingham; Dr. Strahan, Northampton; Mr. Priestley, South Shields; Mr. W. H. Pearce, London; Dr. Sonsino, Pisa; Mr. E. H. Hope, Liverpool; Surgeon-Major Dobie, Secunderabad; Dr. Biden, Hyères; Mr. Q. Silcock, London; Mr. Tingley; Dr. Ross, Bromley; Mr. Conolly London; Mr. Lawrence Hamilton, London; Dr. Tucker Wise; Dr. Althaus, London; Dr. C. E. Hoar, Maidstone; Dr. Bezly Thorne, Berlin; Mr. W. G. Nash; Mr. Cardew, London; Messrs. Lee and Nightingale, Liverpool; Dr. Abeille, Paris; Messrs. Hertz and Collingwood, London; Dr. Mansel Moullin, London; Messrs. Fox and Bousfield, London; Dr. Brett, Watford; Mr. A. S. Creagh, Port Molloti, S.A.; Dr. Milne, Victoria, B.C.; Herren Vanderhoeck und Ruprecht, Göttingen; Mr. W. D. Severn, Putney; Messrs. Keith and Co., Edinburgh; Herr G. Hermann, Hamburg; Messrs. Oliver and Boyd, Edinburgh; Mr. Cowen, Ayr; Messrs. Duncan, Flockhart, and Co., Edinburgh; Dr. May, Hanwell; Dr. Stalker, Dundee; Mr. Hugh Lane, Bath; Mr. W. Whitehead, Manchester; Messrs. Davies and Co., London; Dr. Steavenson; Dr. Helm, Marazion; Dr. Kaspar, San Francisco; Dr. B. Walker, Spondon; Dr. Thudichum; Messrs. Mason and Co., Chelsea; M. Blount, Paris; Mr. Eminson; Dr. Honey, Stoke Devonport; Dr. Rentoul, Liverpool; Mr. Lund, Manchester; Mr. P. Thornton, Canterbury; Mr. McCormick, Brighton; Mr. Sheppard, Worcester; Dr. W. McMurray, Sydney; Dr. Spicer, London; Mr. W. Raynham, London; Dr. F. W. Greene, Mallow; Dr. Ashby, Manchester; Dr. Hargreaves, London; Mr. Munro, Bolton; Dr. H. W. Phillips, Croydon; Dr. Murrell, London; Mr. J. B. Browne; Dr. Freer, Birmingham; Mr. Grün, Putney; Mr. Rose, Staffs; Dr. Gangitano, Naples; Mr. Venham, London; Mr. Prown, Edinburgh; Dr. Cushny, Strassburg; Mr. Dykes, Hamilton; Mr. Kirkby, Oxford; Dr. Dudley Buxton, London; Mr. Morgan, Clevedon; Messrs. Brown, Gould, and Co., London; Mr. G. V. Miller, Middlesbrough; Messrs. Carnrick and Co., London; Mr. H. A. Reeves, London; Messrs. Fenwick and Chinery, London; Dr. Maskew, Southampton; Mr. H. Hick, New Romney; Dr. Nason, Nuneaton; Mr. Warner, Sheffield; Dr. Kenneth Campbell, London; Mr. J. M. Rees, London; Messrs. Watkins and Osmond, London; Dr. Phillipson, Whitley; Mr. Graves, Radnorshire; Dr. H. Campbell, London; Mr. E. A. Piggott, Clare; Mr. W. Blake, London; Mr. McKenzie, Shoreham; Dr. Maturin, Winchfield; Mr. Booth, Rochdale; Mr. Kelly, London; Mr. Williams, Carmarthen; Mr. Higgs, Henley-on-Thames; Messrs. Oppenheimer and Co., London; Mr. Nodes, Glamorganshire; Messrs. Hopkinson and Co., Notts; Mr. Wigg, Derby; Mr. Brown, Highgate; Messrs. Allen and Hanburys, London; Dr. Elliott, Ramsbottom; Messrs. Orridge and Co., London; Mr. Muthusawney, Madras; Mr. Martindale, London; Rev. A. Tooth, Croydon; Mr. G. H. Salter, Learmouth, Australia; Mr. C. Jones, Ealing; House Surgeon; Proprietor, *Chester Chronicle*; A. J.; W. M. M.; X. L., London; Maltine Manufacturing Co., Bloomsbury; Cantab., London; Surgery, Huddersfield; Sanitas Co., London; M.B., Southport; Alpha; General Practitioner; In Doubt; Poplars, London; M. O. H., Stockton-on-Tees; Matron, Bury St. Edmunds; Matron, Stamford; M. C. K., London; Pulsometer Engineering Co., London; Medicus, Sheffield; Great Tower-street Tea Co., London; Hospital Visitor; M.B. Glas.; Inquirer; Lady Superintendent, Monsall; Home County, London.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Fawcett, Durham; Mr. Ridley, Honiton; Mr. Tully, Hastings; Mr. Thomas Twyford, Hanley; Mr. Aspinwale, Cheshire; Messrs. Reynolds and Branson, Leeds; Mr. Tyte, Minchinhampton; Messrs. Macmillan and Co., London; Mr. Leys, Helensburg, N.B.; Messrs. Hooper and Co., London; Mr. Macdonall, Gourock, N.B.; Mr. Meyer, Walham Green; Mr. Baly, Hexham; Dr. Beale, London; Major Pead, East Dulwich; Mr. Kirkby, Oxford; Mr. Plummer, Wilts; Mr. O'Meara, Leicester; Dr. Bennett, Bristol; Mr. Bonar, Cornwall; Messrs. Smith and Son, Manchester; Mr. Jacoby, Stoke-on-Trent; Mr. Dott, Manchester; Mr. Harker, Bournemouth; Mr. Wray, Daventry; Mr. T. Smith, London; Mr. Fulker, Bournemouth; Dr. Goodridge, Blandford; Mr. McKenzie, Shoreham; Dr. Elliott, Devon; Mr. Cummins, Brewood; Mr. Hyde, Northampton; Mr. Bunting, Notts; Mr. Hunt, Perth; Mr. Boddie, Edinburgh; Mr. Smith, Brighton; Dr. Kennifick, co. Tipperary; Mr. Wheeler, Manchester; Mr. Blayney, Manchester; Mr. Burrell, Norfolk; Mr. Smith, Sudbury; Mr. Deacon, Manchester; Mr. Elliott, Todmorden; Mr. Hall, Oudh; Messrs. Hogg and Son, London; Mr. Heywood, Manchester; Dr. James, Rhondda Valley; Dr. Pavy, London; Mr. Clark, Doncaster; Mr. Duncan, Aberdeen; Dr. Hudson, Bournemouth; Mr. Fabes, Walkley; Dr. Owen, Gloucester; Dr. Harvey, Derby; Mr. Pizzala, London; Mr. Flockton, Notts; Mr. Elliott, Devon; Mr. Bruce, Richmond; Mr. Watt, London; Alpha, Newcastle-on-Tyne; Duplex, London; Secretary, St. Mungo's College, Glasgow; X., Holborn; Physician, London; Physician, The Hospital, Llanelly; Lex, London; Secretary, Colonial Mutual Life Assurance Co., London; Stretton, Kidderminster; Hygienic Knitting Co., Kidderminster; M. S., Hull; Secretary, St. John Ambulance Association; W. X., London; Cromwell House, Northallerton; West Riding, London; Urbanus, London; Cymro, Manchester; 861, Old Kent-road; Quinine, London; J. G., Endsleigh; S. W. B.; Penrith Union; S. L. B., Manchester; M.D., Finchley; W. W., Truro; Beta, London; R. M. O., Lincoln; M B., Southport; F. C., Ladbrokegrove; Home, London; Efficient, London; X. Z., London; D. E. A., London; G. G., Norwood; A. N. S., London; F. G., Selby; H. E. W., London; M.B, London; Physician; G. E.; Dr., Bethnal-green.

NEWSPAPERS.—*Manchester Guardian, Birmingham Gazette, Speaker, Scotsman, World (New York), Newcastle Chronicle, Dundee Advertiser, Liverpool Daily Post, North British Mail, Sussex Daily News, Leeds Mercury, Manchester Courier, Yorkshire Post, Bristol Mercury, Sheffield Daily Telegraph, Builder, Spectator, Surrey Advertiser, Mining Journal, Windsor and Eton Gazette, Magazine and Book Reviews, Law Journal, Architect, Guy's Hospital Gazette, Hertfordshire Mercury, Reading Mercury, Insurance Observer, Insurance Guardian, Trade, Finance, and Recreation, Derby Mercury, Citizen, National Observer, Brighton Examiner, Wigan Observer, Croydon Advertiser, Derbyshire Times, Admiralty Horse Guards Gazette, Kendal Mercury, Norfolk Daily Standard, Educational Times, &c.*, have been received.

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Advertisements (to ensure insertion the same week) should be delivered at the Office not later than Wednesday, accompanied by a remittance.

Answers are now received at this Office, by special arrangement, to Advertisements appearing in THE LANCET.

Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

Advertisements are now received at all Messrs. W. H. Smith and Son's Railway Bookstalls throughout the United Kingdom and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 66, Rue Caumartin, Paris.